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Reappraisal of Heat Flow Variations in Mainland Africa

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Abstract

A reappraisal of geothermal data of the mainland of Africa has been carried out based on data sets available at the IHFC website, incremented with updated information on volcanic activities of post Holocene times. Our compilation makes use of 1480 heat flow values that include 1327 observational data supplemented with 36 estimates derived from heat flow-age relation. In addition, the method of magmatic heat budget (MHB) has been employed in deriving deep crustal heat flow values for 117 sites of recent volcanic activity, most of it located in Ethiopia. These data sets were regrouped into regular equal-area cells with dimensions of 5 x 5 degrees and subsequently employed in deriving maps of the regional distributions of heat flow and geothermal resources and interpreted on the basis of available information on tectonic setting and geological characteristics. The most prominent features are the relatively high values in the region of rift valleys in the eastern sector of the continent. High heat flow values also occur along north-south trending belts of Atlas Mountains in the north and pockets associated with the Cameroon volcanic chain on the west-central parts of the continent. The vertical distributions of temperatures were calculated for depths reaching down to 6 km. The associated resource base calculations indicate availability of high temperature resources in vast regions of the African continent.

1. Introduction

A number of regional geophysical studies have been carried in the continental segment of the African lithospheric plate, composed of cratons that formed during Archean times (about 3.6 to 2 billion years), fold belts of Precambrian age, sedimentary basins of Phanerozoic period and geological elements hosting a variety of rift and volcanic features of Cenozoic times. Results of such studies have been useful in understanding the general tectonic characteristics of the continent. However, because of the large area extent of these tectonic units, most of the earlier studies have been made as parts of regional investigations of limited extent that provide only segmented views of the regional geophysical fields. This has been a major obstacle in understanding structure of large-scale tectonic features and their interactions within the geodynamic framework. A prime example of such a situation may be found in geothermal studies of the continent, some of which has been carried out with focus on geothermal energy assessments. In this context, the main purpose of the present work is in providing a reanalysis of the results of geothermal measurements in the African continent and consider its implications for mapping largescale thermal features of the crustal segments.

For purposes of the present work we define African continent as the contiguous portion of the landmass lying roughly between Atlantic Ocean to the west, Mediterranean to the north, Red sea rift in the east and Indian ocean to the south. Excluded from this definition are the Sinai Peninsula in the east, islands in the Indian ocean (for example, Madagascar) and the relatively small islands in Atlantic Ocean to the west. It is obvious that this choice is based mainly on geographic considerations and do not follow political boundaries. The outline of the area considered is illustrated in the map of Figure 1.

2. Overview of Heat Flow Data for Africa

The surface thermal conditions of Africa are known to have a marked effect on subsurface temperatures at shallow depths. In the African continent there are considerable variations in the mean annual surface temperatures. In north-central Africa surface temperatures are high in the range of 25 to 30°C while much lower values prevail in the southern regions. The geographic distribution of mean annual surface temperatures for Africa has been discussed for example by New et al. (2000 and NOAA, 2019). But very little is known of the regional subsurface thermal conditions, which depend

on analysis of data on geothermal gradients derived from measurements in underground mines and boreholes. Needless to say, it also has significant impacts in the perspectives for utilization of geothermal resources at shallow depths.

The heat flow data sets employed in the present work is derived from the compilations carried out by the International Heat flow Commission – IHFC (Jessop et al, 1976, IHFC, 2013). Initial versions of IHFC data base have been employed in several studies of continental heat flow variations (see for example: Pollack et al., 1993; Davis and Davis, 2010; Gotourbe et al., 2011, Macgregor, 2019). However, very little attention has been paid in these earlier compilations for verifying the reliability of the values compiled in the IHFC data base. In many cases, crucial data on temperature gradient and thermal conductivity are missing. Also, unrepresentative and/or incorrect values of these parameters have been employed in calculation of heat flow values. In the present work, attention is focussed in verifying and proposing use of representative values for all sites of heat flow measurements reported in the IHFC data base for the African continent. In many cases, the absence of thermal conductivity or temperature gradient values were corrected based on well-known relations between heat flow, temperature gradients and thermal conductivity. Such corrections assume that steady state conditions prevail, that heat transport is mainly by conduction and that other disturbing processes (such as thermal refraction, topography and water flow) are absent. In some cases, literature values of representative thermal conductivity were employed. The corrections also took into account plausible geothermal characteristics of regional geologic and tectonic settings.

According to results of the present work heat flow measurements have been carried out in 32 of the 49 countries. The total number of data is 1327 and the mean heat flow is 55 +/- 20 mWm². The data density is approximately 0.2 per km². The geographic distribution of the corrected data base is illustrated in the map of Figure 1. The crosses in this figure indicate central points of the grid system employed in deriving numerical representation of the heat flow field. A detailed list of heat flow values is given in Appendix – 1.

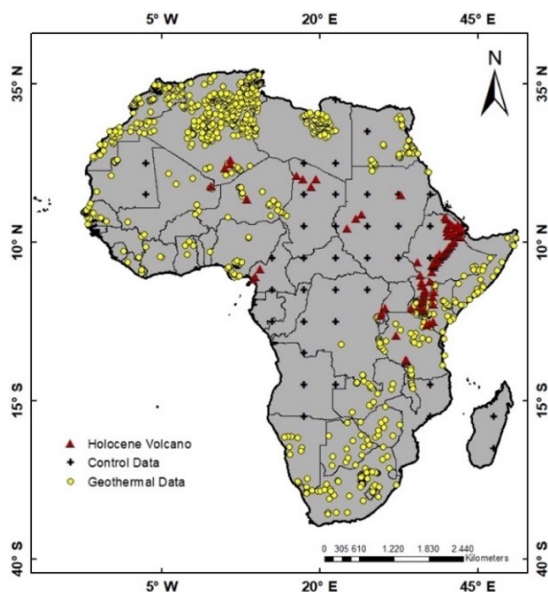


Figure 1 - Distribution of chosen heat flow data base for mainland Africa. Crosses indicate locations of cells in the grid system employed for deriving heat flow maps.

Presented in Table 1 are the number of heat flow values for 33 countries. Heat flow measurements have not so far been carried out in the remaining seventeen countries. The data density is expressed as numbers per 10⁶ km².

Table 1 - Summary of mean heat flow data for Africa. DD – Data Density; μ – Average; σ - Standard Deviation

Country	N	Area (km ²)	DD (10 ⁶ N/km ²)	q (mW/m ²)	
				μ	σ
Algeria	248	238174	1054	82	19
Benin	1	112622	9	53	
Angola		12467		0	-
Botswana	15	581726	28	50	14
C. Africa		622984			
Burk. Faso		274000			
Cameroon		475442			
Burundi		27830			
Chad	3	128400	23	45	19
Ivory Coast	3	322460	9	24	8
D. R. Congo	10	234485	196	58	47
Congo		342000			
Egypt	59	100144	569	65	38
Djibouti		23200			
Ethiopia	9	110430	63	44	8
Ghana	5	238534	21	45	4
Eswatini		17364			
Eq. Guinea		28051			
Eritrea		117600			
G. Bissau		36125			
Gabon		267668			
Kenya	76	580367	131	54	36
Gambia		10380			
Guinea		245857			
Lesotho	13	30355	428	58	20
Liberia	12	111369	108	43	11
Libya	67	175954	375	72	9
Malawi	20	118484	93	48	38
Mali	12	124019	113	47	18
Mauritania	26	103070	243	54	15
Morocco	233	710850	326	68	18
Mauritius		204000			
Mozambique	1	801590	7	63	44
Namibia	12	825418	15	68	11
Niger	30	126700	237	59	23
Nigeria	58	923768	61	51	15
Rwanda	9	26798	37	25	
Senegal	38	196723	193	55	11
Sierra Leone	1	71740	14	26	
Somalia	22	637657	38	62	11
South Africa	151	122103	1228	52	11
Sudan	3	186148	21	80	34
South Sudan		644329			
Tanzania	50	945203	26	42	23
Togo		56785			
Tunisia	80	163610	489	78	23
W. Sahara	24	252120	87	77	17
Uganda		236040			
Zambia	26	752614	41	65	8
Zimbabwe	10	390757	26	51	23
Total	1327	14.09x10⁶	197156	55	20

Note that there are considerable variations in the data density. Most of the data are concentrated in the northern and southern parts of the continent. Data density is poor in the central parts of the continent. Algeria, Morocco and South Africa stand out as countries with more than 100 measurements. On the other hand, Benin, Chad, Cote d'Ivoire, Rwanda, Sierra Leone and Sudan have less than five values each. Heat flow in excess of 70mW/m² were found in Algeria, Sudan, Tunisia and Western Sahara. Values of standard deviation in excess of 20 mW/m² have been found for Congo, Egypt, Kenya, Mozambique, Malawi and Sudan.

3. Influence of Tectonic Setting on Heat Flow

The main age provinces in mainland Africa (Arquean, Proterozoic, Paleozoic, Mesozoic and Cenozoic) have been considered as indicative of the tectonic setting of the continent, illustrated in the map of Figure 2. As can be verified in this map the northwestern and southern parts of the continent have higher predominance of Arquean and Proterozoic provinces, while the central and eastern provinces are characterized by provinces of younger age values. The dots in this map indicate locations of heat flow measurements reported in the IHFC data base.

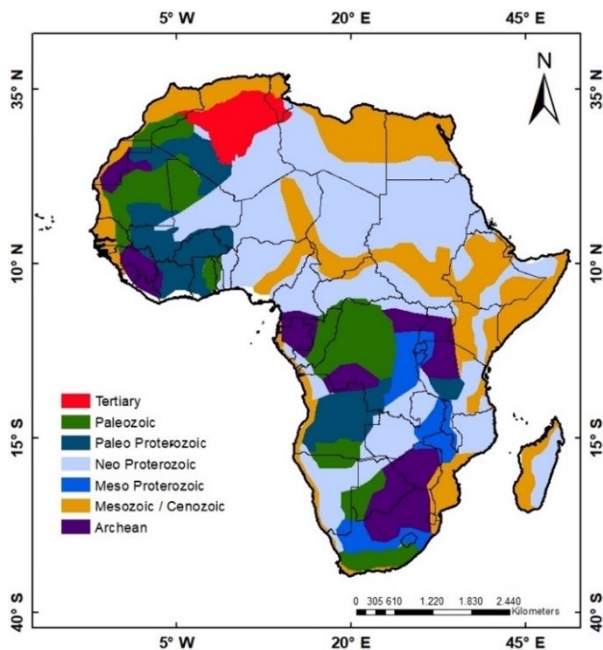


Figure 2 – Distribution of heat flow data relative to the tectonic provinces

Analysis of data reported in IHFC compilation indicate that Arquean provinces are characterized by relatively low heat flow values of less than 60 mW/m², the average value being 50 mW/m². For the vast periods of Paleo, Meso and Neo Proterozoic present heat flow is constant with values falling in the range of 55 to 65 mW/m². Apparently, this trend has continued for age provinces described as Precambrian and Paleozoic. The value of present heat flow increases to 67 mW/m² for Mesozoic provinces. This is followed by another notable jump to 80 mW/m² for Tertiary provinces. In fact, the highest mean value of 82 mW/m² is encountered for localities in the Tertiary province. The distribution of data with respect to the tectonic provinces is illustrated in Table 2.

Table 2 - Heat flow values for tectonic provinces in Africa.

Age Province	N	Average	σ
Arquean	160	50	13.2
Paleo-Proterozoic	23	59	34.5
Meso-Proterozoic	77	59	38.7
Neo-Proterozoic	198	60	23.5
Precambrian	5	50	36.4
Paleozoic	45	59	24.4
Meso-Cenozoic	563	67	23.8
Tertiary	214	80	15.6
Total	1327	55	20

A similar trend can also be seen with respect to the geologic provinces, the details of which is provided in Table 3. The geologic province of Precambrian has heat flow of 51 mW/m² while for Jurassic provinces it is in the range of 71 to 76, which is higher than that for Cenozoic and Tertiary.

Table 3 - Mean and standard deviation of heat flow for the geologic provinces in Africa.

Ages	N	Average	σ
Precambrian	227	51	17
Paleozoic	94	60	22
Jurassic	99	71	24
Cretaceous	158	76	20
Cenozoic	34	63	19
Tertiary	603	67	23
Lakes and Seas	110	60	37
Areas Outside	3	118	43
Total	1327		

The heat flow map derived on the basis of IHFC data base in which the numerical interpolations take into consideration the geographic distribution of tectonic provinces is presented in Figure 3. Standard mapping procedures adopted for this purpose included calculation of mean heat flow values for a regular grid system of 5 x5 degrees. However, the fact that not all grid elements have observational data creates a problem in interpolation schemes employed for deriving maps. Thus, representative heat flow values derived from heat flow – age relations (Polyak and Smirnov, 1968; Hamza and Verma, 1969) were assigned for grid elements that did not have observational data.

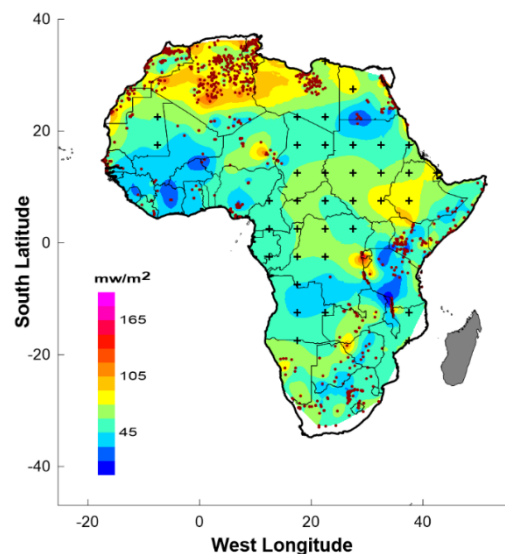


Figure 3 - Heat flow map of Africa taking into consideration influence of tectonic setting in numerical interpolation.

This map reveals relatively high heat flow in the northern parts of the continent but has failed to reproduce geographic extent of high heat flow fields of the East African Rift System. Also, there are no indications of high heat flow in the central and western parts of the continent.

4. Use of Heat Flow – Age Relations

In this some heat flow values in the central region of mainland Africa has been estimated using values derived from heat flow – age relations (Polyak and Smirnov, 1968; Hamza and Verma, 1969; Viera and Hamza, 2011). Subsequently, these have assigned for grid elements that did not have observational data. In earlier works (see for example, Pollack et al, 1993) heat flow values obtained using an empirical form of this relation. In the more recent work of Vieira and Hamza (2011) heat flow values derived using the linear relation between heat flow and inverse of the square root of tectonic age. The equations used are derived from the general solutions observed in cooling of magmatic provinces (Carslaw and Jaeger, 1959 e Hamza, 1982). Under such circumstances, the relation between heat flow (q) and tectonic age of the last thermal event (t) can be written as:

$$q(t) = \alpha / \sqrt{t} + \beta \quad (1)$$

where α is the angular coefficient, β the intercept of the linear relation and t the elapse time since the last thermal event. The nature of the relation for the continent of Africa is illustrated in the upper panel of Figure 4. The lower panel illustrates the classical display of relation between heat flow and age on linear scales.

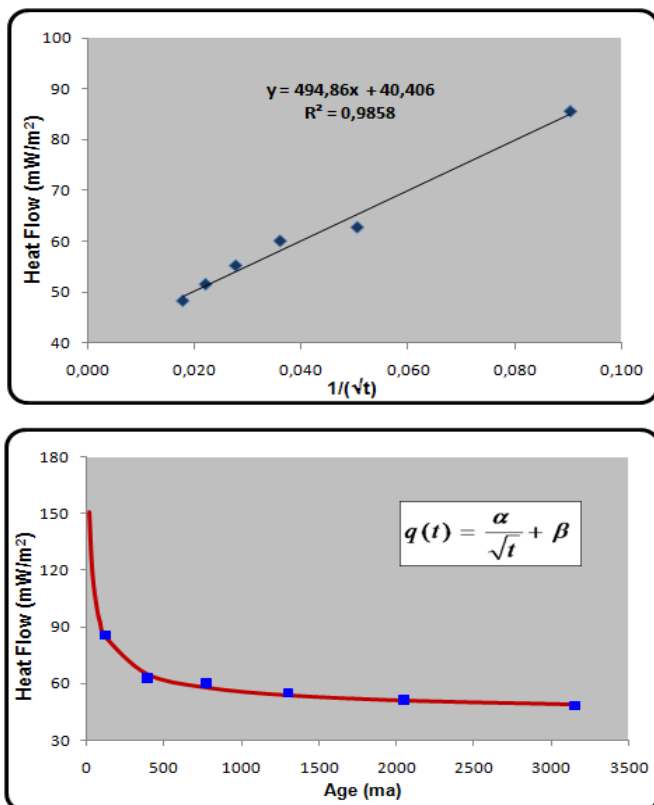


Figure 4 - Relations between heat flow and age of tectonic event for Africa. The upper and lower panels illustrate the inverse square root and linear dependences between heat flow and tectonic age.

Assigning heat flow values based on the heat flow – age relations allows derivation of synthetic global heat flow maps, as has been done by Vieira and Hamza (2011). Restricting the use of theoretical values only to areas where experimental data is unavailable has been widely an adopted practice (see for example Pollack et al, 1993). Figure 5 illustrates the results obtained for a data comprised of set of 44386 observational heat flow values supplemented with theoretical heat flow for areas without data.

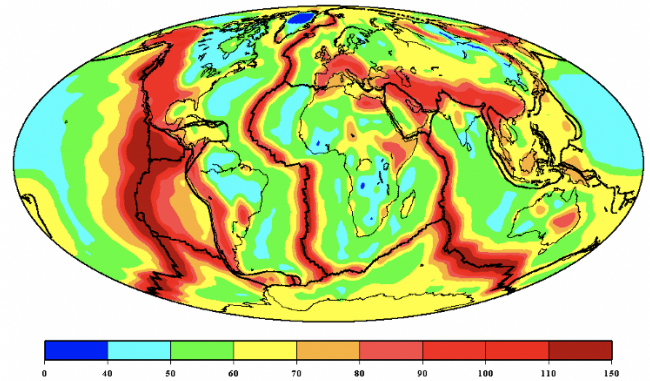


Figure 5 - Global heat flow map based on 44386 heat flow values supplemented with theoretical heat flow for areas without data (Vieira and Hamza, 2011)

5. Estimates of Heat Flow in areas of Volcanic Settings

According to available information volcanic activity plays a major role in the geothermal fields of the African continent. Clearly consideration of heat flux associated with volcanic activities is fundamental for better understanding of the crustal thermal conditions. However, for obvious reasons, heat flow measurements are rarely attempted in volcanic areas. Hence the need for considering a method that would allow for heat flow values in areas of volcanic regions. In this context we note the observations of Noguchi (1970) that the emplacement temperature of andesitic magma at mid crustal levels is approximately 1200°C while the depth of emplacement falls in the range of 15 to 25 km. Similar estimates were also made by Mamani et al. (2000), Annen et al. (2006), Suarez (2017), and Borzotta et al. (2018).

Smith and Shaw (1978) considered the relation between magma volume (in cubic kilometers) and time elapsed (in years) as approximately linear, when both are expressed on log scale. A combination of such observations can be employed in obtaining a rough estimate of heat flow for volcanic regions. The essence of this new procedure, designated as the method of Magmatic Heat Budget – MHB, has already been employed in obtaining estimates of heat flow in several regions of South America (Vieira and hamza, 2019) and Antarctica (Guimaraes et al., 2020). may be understood by considering the importance of residual heat in magma emplacement. In general, the quantity of residual heat is dependent on the magma volume emplaced and time elapsed after its emplacement. Our interest in the present context is in estimating heat flux for volcanic regions of Africa. The starting point is the relation between magma volume (in cubic kilometers) and time elapsed (in years) proposed by Smith and Shaw (1978). It is approximately linear, when both are expressed on log scale. An example of this line of reasoning is illustrated in Figure 6

where the domain limited by dashed line may be considered as representing the division between regions with and without residual magmatic heat.

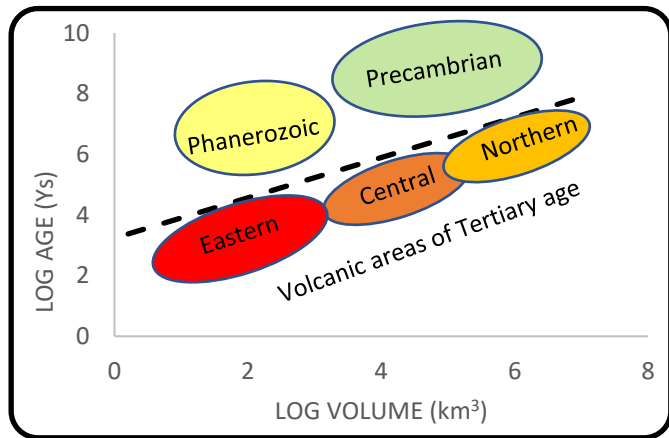


Figure 6 - Relation between volume and age for areas of volcanic activity (Adapted from Smith and Shaw, 1978).

In other words, sites falling in the region below the belt of dashed lines may be considered as having potential for retaining residual magmatic heat in subsurface layers. For the same reason, sites falling above the belt of dashed lines may be considered as those with little residual magmatic heat.

Clearly it is necessary to examine in some detail information on locations and age values of volcanic activities in the African continent. According to available information eruptions occurred in about 41 volcanic regions in about 10 countries during historic times. These have ages < 10000 years. Heat flow in such areas of recent volcanic areas estimated on the basis of MHB method is estimated to be in the range of 120 to 150mW/m². This list of volcanic areas is presented in Table 4.

Table 4 - Age values for volcanic fields with eruptions during historic times (ages < 10000 years).

Country	Volcano	Longitude	Latitude	Age
Cameroon	Cameroon	9.17	4.203	2000 CE
Congo	Nyamuragira	29.2	-1.408	2020 CE
Congo	Nyiragongo	29.25	-1.52	2020 CE
Congo	Karisimbi	29.45	-1.506	8050 BCE
Congo	Visoke	29.485	-1.458	1957 CE
Djibouti	Ardoukoba	42.47	11.58	1978 CE
Ethiopia	Dallol	40.3	14.242	2011 CE
Ethiopia	Alu-Dalafilla	40.553	13.793	2008 CE
Ethiopia	Erta Ale	40.67	13.6	2020 CE
Ethiopia	Alayta	40.573	12.888	1915 CE
Ethiopia	Dabbahu	40.48	12.595	2005 CE
Ethiopia	Mand. Hararo	40.82	12.17	2009 CE
Ethiopia	Dama Ali	41.63	11.28	1631 CE
Ethiopia	Manda-Inakir	42.2	12.38	1928 CE
Eritrea	Dubbi	41.809	13.579	1861 CE
Eritrea	Nabro	41.7	13.37	2012 CE
Ethiopia	Fentale	39.93	8.975	1820 CE
Ethiopia	Kone	39.701	8.788	1820 CE
Ethiopia	Tullu Moje	39.137	8.159	1900 CE
Ethiopia	Alutu	38.78	7.77	50 BCE
Guinea	Santa Isabel	8.762	3.588	1923 CE
Kenya	South Island	36.6	2.63	1888 CE
Kenya	Barrier, The	36.57	2.32	1921 CE
Kenya	Namarunu	36.43	1.98	6550 BCE
Kenya	Emuruan.	36.33	1.5	1910 CE
Kenya	Silali	36.23	1.15	5050 BCE
Kenya	Paka	36.18	0.92	7550 BCE
Kenya	Menengai	36.07	-0.2	6050 BCE
Kenya	Olkaria	36.292	-0.904	1770 CE

Kenya	Longonot	36.446	-0.914	1863 CE
Kenya	Chyulu Hills	37.88	-2.68	1855 CE
Sudan	Marra, Jebel	24.27	12.95	2000 BCE
Sudan	Meidob	26.47	15.32	2950 BCE
Sudan	Bayuda	32.75	18.33	850 CE
Tanzania	Lengai	35.914	-2.764	2020 CE
Tanzania	Meru	36.75	-3.25	1910 CE
Tanzania	Igwisi Hills	31.933	-4.889	10450
Tanzania	Ngozi	33.554	-8.989	1450 CE
Tanzania	Rungwe	33.668	-9.135	1250 CE
Tanzania	Kyejo	33.792	-9.229	1800 CE
Uganda	Fort Portal	30.25	0.7	2120 BCE

A similar list of volcanic regions is presented in Table 5 for extinct magmatic activities during Holocene times. There are 76 volcanic regions in this category, distributed over 11 countries.

Table 5 - Volcanic fields with eruptions during pre-historic times with ages > 10000 years.

Country	Volcano	Latitude	Longitude
Algeria	Tahalra	22.67	5
Algeria	Atakor	23.33	5.83
Algeria	Manzaz	23.92	5.83
Cameroon	Tombel	4.758	9.717
Cameroon	Oku	6.25	10.5
Chad	Toh, Tarso	21.33	16.33
Chad	Tousside	21.03	16.45
Chad	Voon, Tarso	20.92	17.28
Chad	Koussi, Emi	19.8	18.53
Congo	Tshibinda	-2.32	28.75
Ethiopia	Ale Bagu	13.512	40.631
Ethiopia	Hayli Gubbi	13.51	40.722
Ethiopia	Asavyo	13.098	41.599
Ethiopia	Mat Ala	13.106	41.161
Ethiopia	Tat Ali	13.284	41.063
Ethiopia	Borawli	13.304	40.987
Ethiopia	Afdera	13.088	40.853
Ethiopia	Ma Alalta	13.013	40.185
Ethiopia	Dabbayra	12.38	40.07
Ethiopia	Dabbayra	12.38	40.07
Ethiopia	Dabbayra	12.38	40.07
Ethiopia	Dabbayra	12.38	40.07
Ethiopia	Gabilema	11.08	41.27
Ethiopia	Yangudi	10.58	41.042
Ethiopia	Ayelu	10.082	40.702
Ethiopia	Adwa	10.07	40.84
Ethiopia	Hertali	9.78	40.33
Ethiopia	Mousa Alli	12.469	42.404
Ethiopia	Mallahle	13.27	41.65
Ethiopia	Sork Ale	13.18	41.725
Ethiopia	Mega Basalt	4.063	37.488
Eritrea	Gufa	12.55	42.53
Eritrea	Assab	12.95	42.43
Eritrea	Alid	14.88	39.92
Ethiopia	Gada Ale	13.975	40.408
Ethiopia	Bora Ale	13.725	40.6
Guinea	San Carlos	3.35	8.52
Guinea	San Joaquin	3.35	8.63
Ethiopia	Liado Hayk	9.57	40.28
Ethiopia	Dofan	9.35	40.13
Ethiopia	Beru	8.95	39.75
Ethiopia	Boset-Bericha	8.558	39.475
Ethiopia	Bishoftu	8.78	38.98
Ethiopia	Sodore	8.43	39.35
Ethiopia	Gedamsa	8.357	39.188
Ethiopia	Bora-Bericcio	8.221	39.05
Ethiopia	Unnamed	8.013	39.062
Ethiopia	East Zway	7.874	38.902
Ethiopia	Butajiri-Silti	8.05	38.35
Ethiopia	O'a Caldera	7.47	38.58
Ethiopia	Corbetti	7.193	38.39
Ethiopia	Bilate River	7.07	38.1

Ethiopia	Tepi	7.42	35.43
Ethiopia	Lake Abaya	6.76	37.97
Ethiopia	East Chamo	5.708	37.713
Ethiopia	Korath Range	5.1	35.88
Kenya	North Island	4.059	36.049
Kenya	Central Island	3.496	36.04
Kenya	Marsabit	2.32	37.97
Kenya	Segeberua	1.57	37.9
Kenya	Korosi	0.77	36.12
Kenya	Ol Kokwe	0.62	36.075
Kenya	Nyambeni	0.23	37.87
Kenya	Homa	-0.38	34.5
Kenya	Elmenteita	-0.52	36.27
Kenya	Eburru	-0.65	36.22
Kenya	Suswa	-1.151	36.357
Mali	Zaouatene	19.83	2.83
Niger	Todra	17.68	8.5
Sudan	Kutum	14.57	25.85
Uganda	Kyatwa	0.45	30.25
Uganda	Katwe-Kiko	-0.08	29.92
Uganda	Bunyaruguru	-0.2	30.08
Uganda	Katunga	-0.471	30.191
Uganda	Muhavura	-1.383	29.678
Uganda	Bufumbira	-1.23	29.72

The locations of volcanic regions listed in tables 4 and 5 are indicated in the map of Figure 7. Heat flow in such areas extinct volcanic activity is estimated to be in the range of 100 to 150mW/m². In this map the triangles in red color indicate locations of heat flow estimates for regions of volcanic activity.

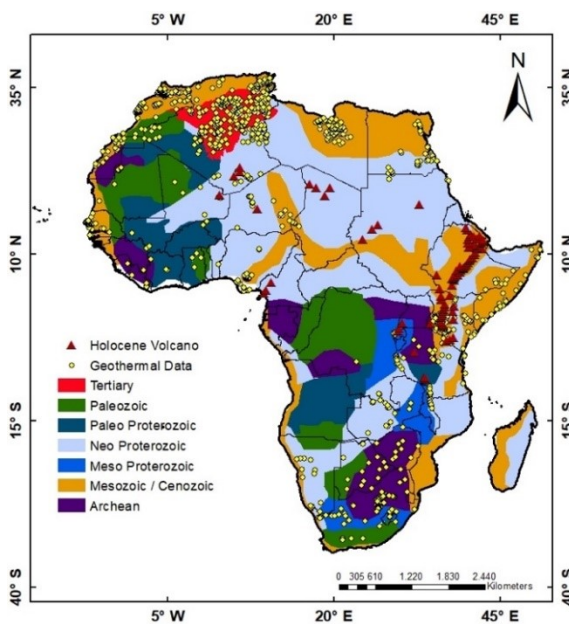


Figure 7 - Distribution of observational and estimated values of heat flow. The triangles in red color indicate sites of heat flow values estimated for locations of volcanic activities.

The heat flow map based on this data set is presented in Figure 8. Estimated values of heat flow were employed for 32 grid elements. It reveals relatively high values not only in the northern parts of the continent but also heat flow fields in locations of the East African Rift System. Also, there are indications of high heat flow in the central and western parts of the continent.

6. Crustal Temperatures

Data sets on heat flow and crustal structure provide basis for determining distributions of temperatures in the upper

crust. In view of the inherent uncertainties in such data sets, calculations are usually based on simple one-dimensional heat conduction models. These incorporate the effects of depth-dependent variations in thermal conductivity and radiogenic heat production. For layered media with constant thermal properties the relation for temperature (T_i) as a function of depth (z_i) is (Hamza, 1982):

$$T(z) = T_{0i} + \frac{q_{0i} - A_{0i} D_i^2}{\lambda_i} z + \frac{A_{0i} D_i^2}{\lambda_i} [1 - e^{-z/D_i}] \quad (1)$$

where T_{0i} is the surface temperature, q_{0i} the surface heat flux, A_{0i} radiogenic heat productivity and λ_i the thermal conductivity of the i^{th} element.

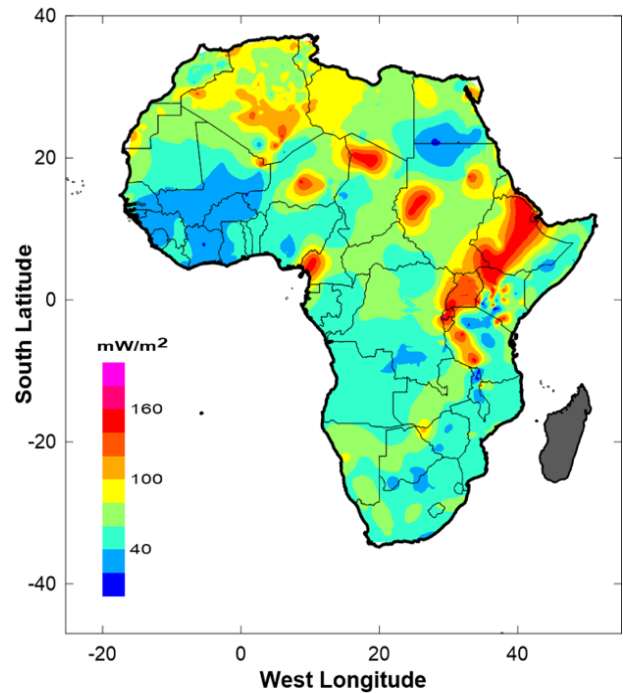


Figure 8 - Updated heat flow map of mainland Africa.

It is common practice to designate the difference between terms $T(z)$ and T_0 of equation (1) as the excess temperature (ΔT). The relation for excess temperature may be written as:

$$\Delta T = \frac{q_0}{k} d - \frac{A_{0rad} d^2}{2k} (1 - e^{-z/D}) \quad (2)$$

Following the usual practice in geothermal model studies, the value of A_0 is derived from empirical relations (Cermak et al., 1991) relating crustal seismic velocities with radiogenic heat productivity. This procedure has been adopted in the present work for calculating temperature distributions and in deriving maps of basal temperatures of the principal crustal layers. The model calculations were carried out for a set of thermal conductivity values representative of the main regional geologic formations in the continent (Hamza et al., 2005; 2017). Such procedures introduce some degree of uncertainty in model results. However, the magnitudes of associated errors are likely to be less than inherent uncertainties in the gradient and heat flow values.

According to model results obtained in this work, excess temperatures in the range of 90 to 150°C occur in several localities at depths of one to three kilometers, in western and central parts of mainland Africa. These include the volcanic areas as well as regions of occurrences of hydrothermal activities. On the other hand, much lower temperatures occur

at similar depths along the northern and central parts of the continent. One of the convenient means of illustrating vertical distribution of excess temperatures is by using stacks of crustal temperature maps at conveniently chosen depth levels, which allow a three-dimensional perspective. Results of such an attempt is illustrated in Figure 9, for excess temperatures at depths of 3 to 6 km.

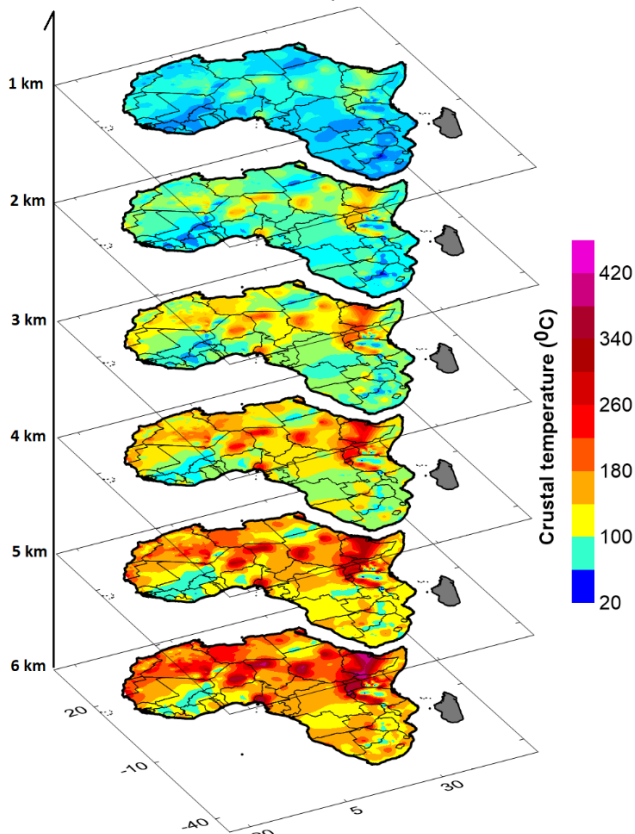


Figure 9 - Temperatures at depths of 1 to 6 km in mainland Africa.

Note that at depths less than 3 km occurrences of geothermal systems with temperatures higher than 150°C are limited to areas of volcanic complexes in Ethiopia, Kenya, Cameroon and southern parts of Algeria. The possibility that crustal blocks with temperatures higher than 150°C, can be encountered at depths less than 3 km is important for planning exploration of Hot Dry Rock (HDR) and Hot Wet Rock (HWR) systems in these regions.

At larger depths of more than 4 km, other high temperature systems appear along vast areas in the central parts of mainland Africa, stretching from Ethiopia to southern parts of Algeria and Morocco. The maps in the lower parts of Figure 6 illustrate the distribution of temperatures at the depth range of 5 to 6 km. Note that in these cases occurrences of geothermal systems with temperatures higher than 150°C are not limited to the volcanic areas. Significantly large high temperature targets occur not only to the western sectors but also spread out to wide regions in the central stable platform areas.

7. Conclusions

A reappraisal of geothermal data of the mainland of Africa has been carried out based on data sets available at the IHFC website, incremented with updated information on volcanic activities of post Holocene times. Our compilation makes use

of 1480 heat flow values that include 1327 observational data supplemented with values derived for 117 sites of volcanic activities and 36 estimates derived from heat flow-age relation. These data sets were regrouped into regular equal-area cells with dimensions of 5 x 5 degrees and subsequently employed in deriving maps of the regional distributions of heat flow and geothermal resources and interpreted on the basis of available information on tectonic setting and geological characteristics. The most prominent features are the relatively high values of surface heat flow covering much areas of Ethiopia and Kenya in the east-central sector of the continent. High heat flow values also occur along north-south trending belts of Atlas Mountains in the north and pockets associated with the Cameroon volcanic chain on the west-central parts of the continent. The vertical distributions of temperatures were calculated for depths reaching down to 6 km. The associated resource base calculations indicate availability of high temperature resources in vast regions of the African continent at depths greater than 3 km. High temperature resources also occur in several isolated regions in the central and northern regions.

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Appendix

Summary of Heat flow data employed in this work, based on modified IHFC data compilation.
 In many cases, representative values were adopted for geothermal gradient, thermal conductivity and heat flow.

The abbreviations used in the main table of the Appendix are listed below.

Name	Description
ID	Data Identification Code. First three letters indicate abbreviation for country
Site	Name or Identification for Site
LON.	Geographic Longitude
LAT	Geographic latitude
EL	Elevation (m)
min D	Minimum Depth for temperature data (m)
max D	Minimum Depth for temperature data (m)
NT	Number of Temperature measurements
RG	Representative value of temperature gradient (oC/km). For details see text.
NK	Number of thermal conductivity data
RK	Representative thermal conductivity (W/m K). For details see text
NHP	Number of radiogenic heat production values
RHP	Representative radiogenic heat production ($\mu\text{W}/\text{m}^3$). For details see text
RQ	Representative heat flow (mW/m^2)
NS	Number of Sites
Publication	Brief list of references for primary publication. For details see IHFC compilation.

Country	ID	Site	LON.	LAT.	EI.	min D	max D	NT	RG	NK	RK	NHP	RHP	RQ	Ns	Publication
Algeria	ALG1	Br301	-0,4010	25,1040	277		1202		29		2,79			82		Takherist & Lesquer1989
Algeria	ALG2	Md101	1,8717	25,3247	200		1419		41		2,9			120		Takherist & Lesquer1989
Algeria	ALG3	TZ301	-0,2050	25,5853	263		1830		44		2,72			119		Takherist & Lesquer1989
Algeria	ALG4	Tb1	2,2500	25,9500	283		2528		42		2,71			113		Takherist & Lesquer1989
Algeria	ALG5	KD1	2,6030	25,9550	393		2978		38		2,69			101		Takherist & Lesquer1989
Algeria	ALG6	TH201	2,9903	26,0050	350		1237		38		2,85			107		Takherist & Lesquer1989
Algeria	ALG7	MH102	2,7333	26,1500	260		1154		43		2,21			95		Takherist & Lesquer1989
Algeria	ALG8	Tc1	2,1363	26,1697	241		2573		39		3,13			121		Takherist & Lesquer1989

Algeria	ALG9	MG101	2,8373	26,2757	278		947		29		2,85		83	Takherist & Lesquer1989
Algeria	ALG10	ODK1	1,4923	26,3207	124		1650		46		2,86		130	Takherist & Lesquer1989
Algeria	ALG11	RAN1	-0,9747	26,3570	250		2610		32		2,56		83	Takherist & Lesquer1989
Algeria	ALG12	HB1	3,9353	26,4727	374		1695		37		2,87		105	Takherist & Lesquer1989
Algeria	ALG13	MKRN1	1,3060	26,5383	189		1050		33		3,2		105	Takherist & Lesquer1989
Algeria	ALG14	Dt1	2,2000	26,6000	209		2926		39		2,82		111	Takherist & Lesquer1989
Algeria	ALG15	IKF1	8,7167	26,6070	550		1378		31		3,06		96	Takherist & Lesquer1989
Algeria	ALG16	Thn1	7,1363	26,7923	833		1147		42		3,01		126	Takherist & Lesquer1989
Algeria	ALG17	KL101	-0,4580	26,8413	227		2585		25		2,5		62	Takherist & Lesquer1989
Algeria	ALG18	Amd4	9,8873	26,8903	605		692		43		2,46		106	Takherist & Lesquer1989
Algeria	ALG19	EL101	6,3590	26,8913	525		814		32		2,87		93	Takherist & Lesquer1989
Algeria	ALG20	Zn1	3,1227	26,9010	261		1471		39		2,79		109	Takherist & Lesquer1989
Algeria	ALG21	TEH1	-0,0403	26,9893	228		4060		28		2,6		74	Takherist & Lesquer1989
Algeria	ALG22	IZ1	-0,0550	27,0167	172		973		28		2,5		70	Takherist & Lesquer1989
Algeria	ALG23	TIO1	-0,1167	27,0333	170		3924		29		3,04		90	Takherist & Lesquer1989
Algeria	ALG24	TTY1	7,7873	27,1520	526		2371		30		3,11		94	Takherist & Lesquer1989
Algeria	ALG25	IS2	2,5020	27,1873	299		2300		40		2,32		109	Takherist & Lesquer1989
Algeria	ALG26	TITN1	1,3687	27,2510	330		2797		35		2,64		93	Takherist & Lesquer1989
Algeria	ALG27	Tm1	3,7217	27,3000	400		1448		44		2,48		108	Takherist & Lesquer1989
Algeria	ALG28	SL1	9,0510	27,3050	556		2234		35		3,06		108	Takherist & Lesquer1989
Algeria	ALG29	Tx1	8,4333	27,3570	475		1216		34		2,85		94	Takherist & Lesquer1989
Algeria	ALG30	QSL2	-6,7757	27,3707	344		1550	7	32		2,66		85	Takherist & Lesquer1989
Algeria	ALG31	HTN1	-8,5590	27,3717	449		2534	12	26		2,85		74	Takherist & Lesquer1989
Algeria	ALG32	DJHN1	-0,9000	27,4000	255		5166		21		3		65	Takherist & Lesquer1989
Algeria	ALG33	HMn1	2,6227	27,4540	410		2326		34		2,59		89	Takherist & Lesquer1989
Algeria	ALG34	IR1	7,8040	27,4873	446		2160		38		2,8		105	Takherist & Lesquer1989

Algeria	ALG35	TEE1	9,8030	27,5020	519		1617		37		2,66		99	Takherist&Lesquer1989
Algeria	ALG36	Bt2	9,1167	27,5667	465		1438		39		2,69		105	Takherist&Lesquer1989
Algeria	ALG37	HOA1	9,7343	27,6247	482		1524		42		2,69		108	Takherist&Lesquer1989
Algeria	ALG38	QSL3	-6,2237	27,6530	391		2692	3	26		3,04		79	Takherist&Lesquer1989
Algeria	ALG39	OTLA1	0,6257	27,7197	332		2217		32		2,86		90	Takherist&Lesquer1989
Algeria	ALG40	GTT1	7,6403	27,8217	477		2493		30		2,84		90	Takherist&Lesquer1989
Algeria	ALG41	Txa1	7,8343	27,8747	439		2452		22		3,39		71	Takherist&Lesquer1989
Algeria	ALG42	GHR1	2,8833	27,8833	320		2300		38		2,96		113	Takherist&Lesquer1989
Algeria	ALG43	Ta1	9,8383	27,9197	492		1859	4	36		2,56		92	Takherist&Lesquer1989
Algeria	ALG44	Ta2	9,8903	27,9237	519		1960	4	40		2,63		105	Takherist&Lesquer1989
Algeria	ALG45	REG3	2,1500	28,0000	652		2600		40		2,71		108	Takherist&Lesquer1989
Algeria	ALG46	SBAA1	-0,1333	28,0177	279		1640		33		2,5		83	Takherist&Lesquer1989
Algeria	ALG47	REG2	2,1257	28,0423	631		2868		38		2,61		100	Takherist&Lesquer1989
Algeria	ALG48	ADO1	7,7853	28,0677	478		2388		32		2,76		88	Takherist&Lesquer1989
Algeria	ALG49	REG6	2,0667	28,0843	620		2380		40		3,19		117	Takherist&Lesquer1989
Algeria	ALG50	TEG7	2,2167	28,1000	620		3090		36		2,77		101	Takherist&Lesquer1989
Algeria	ALG51	IRL2	8,6697	28,1257	463		2720		26		2,42		65	Takherist&Lesquer1989
Algeria	ALG52	SBAA3	-0,1257	28,1423	281		2365		35		2,72		94	Takherist&Lesquer1989
Algeria	ALG53	REG5	2,0667	28,1667	650		2500		39		2,84		111	Takherist&Lesquer1989
Algeria	ALG54	Bd2a	0,1383	28,1717	302		963		42		2,55		106	Takherist&Lesquer1989
Algeria	ALG55	KES1	0,4923	28,1833	374		2100		37		2,81		105	Takherist&Lesquer1989
Algeria	ALG56	Bd1	0,2177	28,1863	307		1376		38		2,56		98	Takherist&Lesquer1989
Algeria	ALG57	HL1	4,3393	28,1863	481		1510		29		2,53		72	Takherist&Lesquer1989
Algeria	ALG58	TEG1	2,5333	28,2500	642		4113		32		2,73		86	Takherist&Lesquer1989
Algeria	ALG59	IAR1	6,5000	28,2500	344		2216		28		2,46		68	Takherist&Lesquer1989
Algeria	ALG60	An1	6,5090	28,3167	386		3005		29		3,15		101	Takherist&Lesquer1989

Algeria	ALG61	TEG5	2,5000	28,3333	642		3438		36		2,72		98	Takherist&Lesque r1989
Algeria	ALG62	TEG2b	2,5413	28,3883	651		3460		36		2,61		95	Takherist&Lesque r1989
Algeria	ALG63	TAD1	0,6197	28,4040	398		1600		35		2,99		105	Takherist&Lesque r1989
Algeria	ALG64	TEG4	2,6667	28,4167	633		3300		35		2,72		95	Takherist&Lesque r1989
Algeria	ALG65	BS1	6,2667	28,4423	371		1855		42		2,68		112	Takherist&Lesque r1989
Algeria	ALG66	OF2	0,1363	28,4500	298		1516		36		3,26		109	Takherist&Lesque r1989
Algeria	ALG67	HYR1	1,5010	28,4510	418		2600		37		2,96		109	Takherist&Lesque r1989
Algeria	ALG68	NQ1	-7,3833	28,4833	495		4433	4	30		2,27		68	Takherist&Lesque r1989
Algeria	ALG69	Ma1	3,4020	28,4893	588		1925		33		2,83		95	Takherist&Lesque r1989
Algeria	ALG70	OMH1	6,2000	28,6000	334		2249		30		2,76		84	Takherist&Lesque r1989
Algeria	ALG71	Tm101	9,2570	28,6697	665		3000		28		2,62		76	Takherist&Lesque r1989
Algeria	ALG72	TL1	3,0167	28,6737	544		2281		34		2,78		95	Takherist&Lesque r1989
Algeria	ALG73	AK101	9,0373	28,7070	593		2723		25		2,48		62	Takherist&Lesque r1989
Algeria	ALG74	Ot102	8,9217	28,7237	545		2938		30		2,8		81	Takherist&Lesque r1989
Algeria	ALG75	TF101	7,3403	28,7737	378		2256		29		2,72		80	Takherist&Lesque r1989
Algeria	ALG76	NAL101	7,8000	28,8000	682		2900		32		2,66		89	Takherist&Lesque r1989
Algeria	ALG77	TU101	7,9423	28,8080	430		2568		27		2,64		72	Takherist&Lesque r1989
Algeria	ALG78	IA102	8,8167	28,8167	560		2574		29		2,55		74	Takherist&Lesque r1989
Algeria	ALG79	Mo1	5,3333	28,8333	360		1014		42		2,49		104	Takherist&Lesque r1989
Algeria	ALG80	IA101	8,8227	28,8353	544		2856		31		2,6		80	Takherist&Lesque r1989
Algeria	ALG81	ES101	9,5070	28,8363	673		3656		30		2,69		78	Takherist&Lesque r1989
Algeria	ALG82	AH101	8,3363	28,9000	454		2947		28		2,65		74	Takherist&Lesque r1989
Algeria	ALG83	DF1A	4,3677	28,9520	395		2337		20		2,42		49	Takherist&Lesque r1989
Algeria	ALG84	IGA-1b	-6,2590	29,0237	575		4480	6	48		2,69		129	Takherist&Lesque r1989
Algeria	ALG85	Kb1	2,2413	29,0247	460		1918		33		2,34		78	Takherist&Lesque r1989
Algeria	ALG86	Kb5	2,1833	29,0833	320		3435		33		2,56		84	Takherist&Lesque r1989

Algeria	ALG87	MJB1	0,8530	29,0873	320		3000		34		3		101	Takherist&Lesquer1989
Algeria	ALG88	Kb6	2,2167	29,1000	430		3500		35		2,59		90	Takherist&Lesquer1989
Algeria	ALG89	Kb2	2,2000	29,1050	463		3828		36		2,52		91	Takherist&Lesquer1989
Algeria	ALG90	Kb4	2,1500	29,1167	430		3580		37		2,57		94	Takherist&Lesquer1989
Algeria	ALG91	ZL1	-7,3237	29,1187	440		2145	5	37		3,11		115	Takherist&Lesquer1989
Algeria	ALG92	AU1	5,5393	29,1217	300		1500		27		2,34		64	Takherist&Lesquer1989
Algeria	ALG93	Ti1	0,0550	29,1843	242		2194		45		2,71		121	Takherist&Lesquer1989
Algeria	ALG94	ET101	8,5717	29,2257	353		3409		28		2,97		80	Takherist&Lesquer1989
Algeria	ALG95	Hr4	6,4550	29,2353	290		3667		28		3,29		83	Takherist&Lesquer1989
Algeria	ALG96	EK1	6,3197	29,2540	286		3432		26		2,65		68	Takherist&Lesquer1989
Algeria	ALG97	Hr3	6,4383	29,2863	284		3611		25		3		80	Takherist&Lesquer1989
Algeria	ALG98	RmN1	6,2383	29,2903	285		2239		29		3,64		107	Takherist&Lesquer1989
Algeria	ALG99	BKH1	5,6167	29,3207	287		2391		32		2,82		90	Takherist&Lesquer1989
Algeria	ALG100	GZ101	9,5343	29,3217	526		3780		30		2,79		83	Takherist&Lesquer1989
Algeria	ALG101	MAT1	6,5353	29,3560	281		3500		30		2,82		84	Takherist&Lesquer1989
Algeria	ALG102	Of101	9,0883	29,3707	501		3286		30		2,6		81	Takherist&Lesquer1989
Algeria	ALG103	ZRFW1	2,2530	29,4090	498		2900		34		2,77		95	Takherist&Lesquer1989
Algeria	ALG104	OU101	8,3000	29,4500	336		4079		28		2,95		82	Takherist&Lesquer1989
Algeria	ALG105	ZRF1	2,5353	29,4580	448		2650		30		2,64		80	Takherist&Lesquer1989
Algeria	ALG106	DRA1	6,5393	29,4873	271		4020		24		2,83		67	Takherist&Lesquer1989
Algeria	ALG107	ZRF3	2,6167	29,5333	468		2740		30		2,8		85	Takherist&Lesquer1989
Algeria	ALG108	BL1	5,4677	29,5570	268		2422		32		2,66		84	Takherist&Lesquer1989
Algeria	ALG109	OS1	2,9580	29,6393	463		3645		28		3,65		101	Takherist&Lesquer1989
Algeria	ALG110	RK1	1,8697	29,6530	400		2040		37		2,69		104	Takherist&Lesquer1989
Algeria	ALG111	Ke1	1,5500	29,6667	380		2280		30		2,57		78	Takherist&Lesquer1989
Algeria	ALG112	Al1	6,3247	29,7383	252		3631		28		2,97		84	Takherist&Lesquer1989

Algeria	ALG113	EAD1	6,7843	29,8423	242		3347		26		2,95		77	Takherist&Lesquer1989
Algeria	ALG114	DKL1	6,2257	29,9030	238		3777		25	3			76	Takherist&Lesquer1989
Algeria	ALG115	St1	4,5707	29,9080	262		2812		31	3,18			100	Takherist&Lesquer1989
Algeria	ALG116	ODTH1	2,5227	29,9667	488		2850		29	2,88			83	Takherist&Lesquer1989
Algeria	ALG117	ESa1	2,1500	30,0217	398		2271		35	2,55			88	Takherist&Lesquer1989
Algeria	ALG118	SAF1	4,3177	30,0540	245		3321		24	3,06			72	Takherist&Lesquer1989
Algeria	ALG119	HA1	2,4227	30,0580	408		2127		39	2,8			108	Takherist&Lesquer1989
Algeria	ALG120	HLL2	5,2217	30,0727	233		2964		25	3,2			79	Takherist&Lesquer1989
Algeria	ALG121	HAD1	8,5040	30,1373	227		4802		24	2,96			72	Takherist&Lesquer1989
Algeria	ALG122	DJD1b	3,4570	30,2550	374		3380		28	2,87			80	Takherist&Lesquer1989
Algeria	ALG123	TAO1	7,1050	30,3403	206		3145		31	2,99			93	Takherist&Lesquer1989
Algeria	ALG124	FCH1	2,1090	30,3873	438		3000		33	2,64			88	Takherist&Lesquer1989
Algeria	ALG125	HNe1	2,5530	30,4590	435		1848		41	2,62			106	Takherist&Lesquer1989
Algeria	ALG126	HLL-1	5,1893	30,5853	207		3402	5	25	2,72			68	Takherist&Lesquer1989
Algeria	ALG127	Nm1	-0,2667	30,6187	544		1621	16	21	3,29			69	Takherist&Lesquer1989
Algeria	ALG128	QEA1	6,7530	30,7227	186		4224	10	28	2,57			72	Takherist&Lesquer1989
Algeria	ALG129	DSB1b	6,2383	30,8217	190		3238	12	28	3			84	Takherist&Lesquer1989
Algeria	ALG130	Qd1	4,7393	30,8893	189		3902	4	22	3,23			71	Takherist&Lesquer1989
Algeria	ALG131	AR3	5,6540	30,9843	188		3460	10	26	3			78	Takherist&Lesquer1989
Algeria	ALG132	Hba1	4,3570	31,0020	241		3449	5	26	2,73			71	Takherist&Lesquer1989
Algeria	ALG133	ARB1	7,2883	31,0197	177		3825	9	25	3,08			77	Takherist&Lesquer1989
Algeria	ALG134	LIT1	-1,4677	31,1060	704		1331	3	29	3,21			93	Takherist&Lesquer1989
Algeria	ALG135	QI3	5,9090	31,1343	178		3458	4	29	2,97			86	Takherist&Lesquer1989
Algeria	ALG136	AMQ1	-0,1883	31,1677	658		2450	19	26	2,88			75	Takherist&Lesquer1989
Algeria	ALG137	KS1	5,4893	31,1677	187		3787	6	27	2,81			76	Takherist&Lesquer1989
Algeria	ALG138	DEA	2,2923	31,1727	494		1524	7	27	3			81	Takherist&Lesquer1989

Algeria	ALG139	RE1	8,5393	31,1873	190		4126	7	26		2,62			68		Takherist&Lesquer1989
Algeria	ALG140	Mr2	-1,5687	31,1893	100		2128	5	33		3,24			107		Takherist&Lesquer1989
Algeria	ALG141	ZEN1	8,0393	31,2853	157		4403	8	18		3			54		Takherist&Lesquer1989
Algeria	ALG142	EDJ11	5,0167	31,3843	182		4093	7	26		2,73			71		Takherist&Lesquer1989
Algeria	ALG143	OR1	0,5530	31,3873	606		3157	10	25		2,88			72		Takherist&Lesquer1989
Algeria	ALG144	SG1	5,8020	31,4070	168		3630	4	28		2,96			83		Takherist&Lesquer1989
Algeria	ALG145	NEK3	-1,5197	31,4197	774		1444	4	27		2,96			80		Takherist&Lesquer1989
Algeria	ALG146	Dr1	3,9843	31,4197	675		3347	4	26		2,77			72		Takherist&Lesquer1989
Algeria	ALG147	OR3	0,3747	31,4257	648		1835	5	24		3,17			76		Takherist&Lesquer1989
Algeria	ALG148	NEK1	-1,4843	31,4540	736		1309	3	33		3			99		Takherist&Lesquer1989
Algeria	ALG149	LD-1	7,2913	31,4843	150		3910	7	24		3,17			76		Takherist&Lesquer1989
Algeria	ALG150	Hd1	4,9167	31,4903	193		3626	10	24		2,75			66		Takherist&Lesquer1989
Algeria	ALG151	NEK2	-1,4383	31,5197	757		1451	5	31		3,16			98		Takherist&Lesquer1989
Algeria	ALG152	ER-12	-1,7060	31,5207	712		2003	5	35		2,51			88		Takherist&Lesquer1989
Algeria	ALG153	RBN1	7,0510	31,5333	152		3948	12	24		3,17			76		Takherist&Lesquer1989
Algeria	ALG154	GBC1	4,7687	31,5520	203		3402	6	24		3,33			80		Takherist&Lesquer1989
Algeria	ALG155	MD1	6,0687	31,6707	169		3460	12	28		3,18			89		Takherist&Lesquer1989
Algeria	ALG156	HBL1	0,7893	31,6843	683		3498	8	23		2,87			66		Takherist&Lesquer1989
Algeria	ALG157	QEF1	7,9423	31,7167	223		4124	10	22		3,14			69		Takherist&Lesquer1989
Algeria	ALG158	OK101	5,0403	31,7923	227		3327	5	24		3,04			73		Takherist&Lesquer1989
Algeria	ALG159	SD1	6,7000	31,8363	138		4254	4	30		2,87			86		Takherist&Lesquer1989
Algeria	ALG160	ZK1	8,0883	31,8383	140		4097	4	25		2,68			67		Takherist&Lesquer1989
Algeria	ALG161	AQ1	1,8167	31,8747	590		2004	4	23		3,48			80		Takherist&Lesquer1989
Algeria	ALG162	GLA2	5,2070	31,9393	223		3600	8	21		3,05			64		Takherist&Lesquer1989
Algeria	ALG163	Aj1	3,0040	31,9500	536		2593	3	26		3,42			89		Takherist&Lesquer1989
Algeria	ALG164	RS1	7,6373	31,9667	140		3965	8	22		3,32			73		Takherist&Lesquer1989

Algeria	ALG165	Taj1	-0,3000	31,9873	840		3802	5	27		2,85			77		Takherist&Lesquer1989
Algeria	ALG166	EG1	9,0560	32,0177	267		3408	8	26		3,23			84		Takherist&Lesquer1989
Algeria	ALG167	BRT1	8,6500	32,0237	185		3676	6	21		3,19			67		Takherist&Lesquer1989
Algeria	ALG168	HRB1	5,8500	32,2030	168		4277	9	22		3,14			69		Takherist&Lesquer1989
Algeria	ALG169	HEB1	4,9883	32,2040	212		4012	8	20		3,2			64		Takherist&Lesquer1989
Algeria	ALG170	SMZ1	3,6060	32,2060	589		2554	4	23		2,83			65		Takherist&Lesquer1989
Algeria	ALG171	ORS1	5,6913	32,2070	135		4239	6	23		3,09			71		Takherist&Lesquer1989
Algeria	ALG172	AF2	3,5227	32,3530	549		2785	6	25		2,92			75		Takherist&Lesquer1989
Algeria	ALG173	Meg1	2,6747	32,3727	617		2274	10	26		2,42			63		Takherist&Lesquer1989
Algeria	ALG174	HKT1	5,5423	32,3873	145		4220	8	23		3,22			74		Takherist&Lesquer1989
Algeria	ALG175	HMK1	1,8197	32,4333	684		3043	11	30		3,13			94		Takherist&Lesquer1989
Algeria	ALG176	Ae2B	3,0863	32,4383	707		2298	3	24		3,13			75		Takherist&Lesquer1989
Algeria	ALG177	Lha1	3,0863	32,4383	707		3310	5	25		3,32			83		Takherist&Lesquer1989
Algeria	ALG178	Bel1	2,4500	32,4757	631		2742	14	25		2,72			68		Takherist&Lesquer1989
Algeria	ALG179	Hrs3	3,1923	32,4843	702		2273	8	26		2,88			75		Takherist&Lesquer1989
Algeria	ALG180	DJF1	3,9667	32,5020	463		2963	10	24		2,67			64		Takherist&Lesquer1989
Algeria	ALG181	Bel2	2,4383	32,5030	638		2505	11	22		3			66		Takherist&Lesquer1989
Algeria	ALG182	EH1	5,5893	32,5393	146		4470	6	22		2,77			61		Takherist&Lesquer1989
Algeria	ALG183	BI1	4,7423	32,5423	300		4209	11	24		2,83			68		Takherist&Lesquer1989
Algeria	ALG184	DJB1b	2,9923	32,6257	730		2841	7	29		2,52			73		Takherist&Lesquer1989
Algeria	ALG185	GHA1	3,5247	32,6257	664		2447	6	27		2,78			75		Takherist&Lesquer1989
Algeria	ALG186	DJB2	2,9833	32,6510	724		2386	5	27		2,74			74		Takherist&Lesquer1989
Algeria	ALG187	BSB2	3,1667	32,7333	710		2400	5	26		2,92			76		Takherist&Lesquer1989
Algeria	ALG188	Qa1	4,6863	32,7727	329		3537	8	21		3,24			68		Takherist&Lesquer1989
Algeria	ALG189	BSB1	3,9883	32,7737	719		2367	4	25		2,8			70		Takherist&Lesquer1989
Algeria	ALG190	OMT	4,8687	32,7903	295		4018	4	24		3,25			78		Takherist&Lesquer1989

Algeria	ALG191	Ab1	2,7363	32,8383	738		3315	4	26		2,73			71		Takherist&Lesquer1989
Algeria	ALG192	Hr2	3,1343	32,8843	727		2308	7	27		3,04			82		Takherist&Lesquer1989
Algeria	ALG193	HN2	6,8590	32,8843	118		4562	8	23		3,17			73		Takherist&Lesquer1989
Algeria	ALG194	Be1	3,7570	32,8903	597		3000	6	30		3,03			91		Takherist&Lesquer1989
Algeria	ALG195	Hr1	3,2707	32,9333	776		2280	7	23		3,43			79		Takherist&Lesquer1989
Algeria	ALG196	ZB1	7,5333	32,9500	80		4095	7	25		3,04			76		Takherist&Lesquer1989
Algeria	ALG197	Baa1	4,5373	32,9717	430		3565	11	24		3,04			73		Takherist&Lesquer1989
Algeria	ALG198	TE-1	6,0217	33,0177	90		3684	12	20		2,8			56		Takherist&Lesquer1989
Algeria	ALG199	DET1	5,4227	33,0187	174		4000	5	23		2,96			68		Takherist&Lesquer1989
Algeria	ALG200	Hr4	3,5070	33,0343	718		2687	8	27		3,48			94		Takherist&Lesquer1989
Algeria	ALG201	Hr3	3,1413	33,0373	728		2352	5	29		3,03			88		Takherist&Lesquer1989
Algeria	ALG202	DAO1	2,9530	33,0667	744		2628	8	30		2,93			88		Takherist&Lesquer1989
Algeria	ALG203	UC101	2,6167	33,0833	805		4326	4	27		2,81			76		Takherist&Lesquer1989
Algeria	ALG204	RJB-1	-0,6580	33,2000	1196		2770	5	30		2,87			86		Takherist&Lesquer1989
Algeria	ALG205	ONS1	3,6747	33,2353	662		2599	5	30		2,63			79		Takherist&Lesquer1989
Algeria	ALG206	LI4	4,3737	33,2737	502		3134	3	27		3,07			83		Takherist&Lesquer1989
Algeria	ALG207	PG1	5,1207	33,3187	230		3896	8	24		3,08			74		Takherist&Lesquer1989
Algeria	ALG208	PH1	5,6413	33,4090	152		4104	6	22		3,45			76		Takherist&Lesquer1989
Algeria	ALG209	MQD1	3,3227	33,4853	820		3956	6	27		2,85			77		Takherist&Lesquer1989
Algeria	ALG210	LI3	4,3363	33,5227	593		3541	5	28		2,54			71		Takherist&Lesquer1989
Algeria	ALG211	ZQA1	5,2343	33,5373	255		3015	6	24		2,67			64		Takherist&Lesquer1989
Algeria	ALG212	ZH1	7,3167	33,5883	46		5046	7	26		2,31			60		Takherist&Lesquer1989
Algeria	ALG213	MAN1	7,8167	34,4167	751		3177	8	27		2,3			62		Takherist&Lesquer1989
Algeria	ALG214	HM1	4,7020	34,6090	744		4421	9	17		3,59			61		Takherist&Lesquer1989
Algeria	ALG215	FO2	8,0373	34,6197	1346		2527	3	27		3			81		Takherist&Lesquer1989
Algeria	ALG216	KM1	7,7697	34,7167	1201		2700	4	30		2,67			80		Takherist&Lesquer1989

Algeria	ALG217	BTN1	8,1090	34,9030	940		3213	6	30		2,53			76		Takherist&Lesquer1989
Algeria	ALG218	GTR1	7,3530	34,9237	1238		3542	8	32		2,78			89		Takherist&Lesquer1989
Algeria	ALG219	NAS-1	1,7863	34,9353	1216		3428	9	20		3,75			75		Takherist&Lesquer1989
Algeria	ALG220	Bds1	-0,3883	35,1580	605		4035	12	30		3,43			103		Takherist&Lesquer1989
Algeria	ALG221	BDJ2	8,1227	35,2187	1120		3844	6	30		2,53			76		Takherist&Lesquer1989
Algeria	ALG222	HTG1	7,4903	35,2217	1070		4339	6	35		3,09			108		Takherist&Lesquer1989
Algeria	ALG223	DOG1	2,7560	35,3373	782		3566	9	18		4,11			74		Takherist&Lesquer1989
Algeria	ALG224	GRN1	2,7187	35,7843	645		2570	4	30		3			90		Takherist&Lesquer1989
Algeria	ALG225	BSR1	3,2343	36,2177	615		3558	4	37		2,73			101		Takherist&Lesquer1989
Algeria	ALG226	ZML	-7,0006	29,0019	440	275	2076	5	47	16	2,5			117		Rimi1990
Algeria	ALG227	Nohoa	5,1250	20,5787	550	55	100	17	21		3,1			64	1	Lesquer_etal1988
Algeria	ALG228	In-Abeggui	6,0500	20,9259	500	30	180	9	14		2,8			38	1	Lesquer_etal1988
Algeria	ALG229	In-Abeggui	6,0500	20,9259	500	30	230	16	14		2,8			39	1	Lesquer_etal1988
Algeria	ALG230	Tin-Seririne 1342	7,3550	21,3000	550	40	170	12	35		1,6			56	1	Lesquer_etal1988
Algeria	ALG231	Tin-Seririne 1342	7,3550	21,3000	550	170	230		9		5,5			50	1	Lesquer_etal1988
Algeria	ALG232	Tin-Seririne F105	7,4030	21,3677	555	40	185	16	8		5,3			45	1	Lesquer_etal1988
Algeria	ALG233	Tin-Seririne F106	6,8510	21,6217	614	50	100	6	15		3,5			52	1	Lesquer_etal1988
Algeria	ALG234	Tin-Seririne F106	6,8510	21,6217	614	100	180	8	10		5,9			59	1	Lesquer_etal1988
Algeria	ALG235	Tanezrouft S355	2,1000	21,6333	450	90	290	19	14		3,6			51	1	Lesquer_etal1988
Algeria	ALG236	Tin-Seririne F101	7,1020	21,6343	590	70	200		8		5,5			44	1	Lesquer_etal1988
Algeria	ALG237	Tanezrouft S352	2,0167	21,6500	450	70	250	21	17		3,3			56	1	Lesquer_etal1988
Algeria	ALG238	Tirek S180	2,6500	21,8056	580	40	140	13	11		2,15			23	1	Lesquer_etal1988
Algeria	ALG239	Tirek S219	2,6500	21,8056	580	30	120	11	11		2,3			25	1	Lesquer_etal1988
Algeria	ALG240	Tin-Seririne F104	7,0333	21,8363	610	80	220	14	8		5,3			43	1	Lesquer_etal1988
Algeria	ALG241	Bachir S 42	6,3198	22,0370	900	16	130	14	11		3,5			38	1	Lesquer_etal1988
Algeria	ALG242	Bachir S 66	6,3198	22,0370	900	16	85	8	10		3,5			35	1	Lesquer_etal1988
Algeria	ALG243	Timouetine TIMOU 10	8,9899	22,0370	850	90	250	19	10		4,1			41	1	Lesquer_etal1988
Algeria	ALG244	Timouetine TIMOU 2	8,9899	22,0370	850	100	190	10	11		3,9			41	1	Lesquer_etal1988
Algeria	ALG245	Timouetine TIMOU 3	8,9899	22,0370	850	95	170	8	10		3,9			39	1	Lesquer_etal1988
Algeria	ALG246	Timouetine TIMOU 5	8,9899	22,0370	850	80	150	9	10		3,9			39	1	Lesquer_etal1988
Algeria	ALG247	Tin Amzi	5,4082	22,4537	1100	50	115	10	21		3			63	1	Lesquer_etal1988
Algeria	ALG248	Nohoa	5,1250	20,5787	550	45	100	7	19		3,4			65	1	Lesquer_etal1988
Algeria	ALG249	AZ1	-8,4142	28,7297	570	520	2915	6	34	15	2,5			85		Rimi1990

Algeria	ALG250	ZML	-7,0006	29,0019	440	275	2076	5	46,8	16	2,5			117		Rimi1990
Algeria	ALG251	HTN	-7,7700	27,1892	453	1292	2535	4	30,4	7	2,5			76		Rimi1990
Benin	BEN1	In Tahat HW5	2,6238	8,4862	440	20	95		14		3			53	1	Lesquer_etal1989
Botswana	BOT1	Lobaste	25,6833	-25,1833	1200	60	140		6	8	4,7			30	1	Ballard_etal1987
Botswana	BOT2	Molopo Farms 1	24,1667	-24,7500	1097		550		21	32	2,9	5	0,2	60	1	Ballard_etal1987
Botswana	BOT3		24,1667	-24,7500					18		2,5			45		
Botswana	BOT4	Molopo Farms 2	24,1667	-24,7500	1097	50	120		17		2,5			43	1	Ballard_etal1987
Botswana	BOT5	Mmamabula	26,6500	-23,6167	970	70	200		37	125	1,1			42	7	Ballard_etal1987
Botswana	BOT6	Maboane	24,5000	-24,1167	1115	60	240		36	125	1,1			35	2	Ballard_etal1987
Botswana	BOT7	Moropule	26,9167	-22,3500	995	40	235		108	125	1,1			52	7	Ballard_etal1987
Botswana	BOT8	Gope	24,2500	-22,6167	1020	100	240		27	19	1,8			53	1	Ballard_etal1987
Botswana	BOT9	Selebi-Phikwe	27,8167	-22,0333	875	148	580		15	29	3,6	3	6,7	53	2	Ballard_etal1987
Botswana	BOT10	Francistown	27,5167	-21,2333	985	69	269		14	19	2,7	3	0,2	37	1	Ballard_etal1987
Botswana	BOT11	Bushman Mine	26,6000	-20,5000	970	78	208		19	41	3,5	6	1,8	65	3	Ballard_etal1987
Botswana	BOT12	Orapa	25,2500	-21,3000	940	70	170		23	19	2,7			62	1	Ballard_etal1987
Botswana	BOT13	Tshane	22,0333	-23,8333	1140	120	240		38	18	2			76	1	Ballard_etal1987
Botswana	BOT14	Mabuasehube	21,9667	-25,2333	1035	70	210		7	14	3,6			25	1	Ballard_etal1987
Botswana	BOT15	Kachikau	24,3167	-18,5167	950	50	230		13	15	4,1	3	1,7	56	1	Ballard_etal1987
Botswana	BOT16	Ngamiland	21,4667	-20,5833	1000	60	150		23	19	2,7	5	1,5	60	2	Ballard_etal1987
Chad	CHA1	KOSAKI	14,7083	14,1750	326	330	3320	4	20		2			40		Brigaud_etal1985
Chad	CHA2	KANEM1	14,0583	14,5933	319	440	2640	1	22		3			66		Brigaud_etal1985
Chad	CHA3	KANEM2	14,1000	14,6900	323	420	2160	3	10		3			30		Brigaud_etal1985
Cote d'Ivoire	CDI1	Odiene Od1	-7,5342	9,2672		60	180		10	10	3			31	1	Brigaud_etal1985
Cote d'Ivoire	CDI2	Bouake Krossounabo	-5,0173	7,6507		50	85		12	1	2,2			26	1	Brigaud_etal1985
Cote d'Ivoire	CDI3	Bouake B. centre	-5,2000	7,6833		30	70		5	2	3,2			16		Brigaud_etal1985
DR of Congo	ZAI1	Likasi KAMOYA	26,9246	-11,0588	1490				17		2,8			48	1	Sebagenzi_et al 1993
DR of Congo	ZAI2	Likasi 3	26,7243	-11,0212	1320				17		2,82			48	1	Sebagenzi_etal 1993
DR of Congo	ZAI3	Likasi 4	26,7243	-11,0212	1320				23		2,82			65	1	Sebagenzi_etal 1993
DR of Congo	ZAI4	Mbujimayi 18	23,3816	-6,1092	595				15		2,67			40	1	Sebagenzi_etal 1993
DR of Congo	ZAI5	Mbujimayi K10	23,3816	-6,1092	590				18		2,69			48	1	Sebagenzi_etal 1993
DR of Congo	ZAI6	L.KIVU-7	29,0175	-1,9850		248	3	3	69		0,59			41		1
DR of Congo	ZAI7	KIVU-10	29,0172	-1,7522		473	5	3	157		0,63	W2	5,8	99		1
DR of Congo	ZAI8	12A	29,1500	-2,1339		375	2	2	298		0,61	W2	5,6	182		1
DR of Congo	ZAI9	12B	29,1500	-2,1339		375	2	2	308		0,61	W2	5,6	188		1

DR of Congo	ZAI10	L.KIVU	29,1500	-2,1339					264		0,7			185		1
DR of Congo	ZAI11	15A	28,9847	-1,9347		400	3	3	26		0,61	W2	5,6	16		1
DR of Congo	ZAI12	15B	28,9847	-1,9347		400	3	3	30		0,61	W2	5,6	18		1
DR of Congo	ZAI13	L.KIVU	28,9847	-1,9347					24		0,7			17		1
DR of Congo	ZAI14	A	30,2675	-7,2172	-592	1392	3	3	50		0,72	W2	3,4	36		1
DR of Congo	ZAI15	B	30,2675	-7,2172	-592	1392	3	3	48		0,72	W2	3,4	34		1
DR of Congo	ZAI16	2	30,2675	-7,2172					50		0,7			35		1
DR of Congo	ZAI17	A	30,2336	-7,2167	-615	1415	3	3	56		0,72	W2	3,3	41		1
DR of Congo	ZAI18	B	30,2336	-7,2167	-615	1415	3	3	53		0,72	W2	3,3	38		1
DR of Congo	ZAI19	3	30,2336	-7,2167					56		0,7			39		1
DR of Congo	ZAI20	A	29,9667	-6,8508	337	463	3	3	79		0,72	W2	3,4	56		1
DR of Congo	ZAI21	B	29,9667	-6,8508	337	463	3	3	75		0,72	W2	3,4	53		1
DR of Congo	ZAI22	6	29,9667	-6,8508					79		0,7			55		1
DR of Congo	ZAI23	A	29,5350	-6,4356	596	204	3	3	25		0,72	W2	3,5	18		1
DR of Congo	ZAI24	B	29,5350	-6,4356	596	204	3	3	24		0,72	W2	3,5	17		1
DR of Congo	ZAI25	10	29,5350	-6,4356					24		0,7			17		1
DR of Congo	ZAI26	A	29,5842	-6,3844	420	380	3	3	31		0,69	W2	3,4	21		1
DR of Congo	ZAI27	B	29,5842	-6,3844	420	380	3	3	35		0,69	W2	3,4	23		1
DR of Congo	ZAI28	11	29,5842	-6,3844					31		0,7			22		1
DR of Congo	ZAI29	12	29,2514	-5,3344	456	1256	3	3	48		0,72	W2	3,3	35		1
DR of Congo	ZAI30	13	29,3517	-5,3000	-456	1256	3	3	57		0,67	W2	3,3	67		1
DR of Congo	ZAI31	A	29,4675	-5,5350	-389	1189	3	3	59		0,72	W2	3,3	42		1
DR of Congo	ZAI32	B	29,4675	-5,5350	-389	1189	3	3	57		0,72	W2	3,3	41		1
DR of Congo	ZAI33	15	29,4675	-5,5350					59		0,7			41		1
DR of Congo	ZAI34	A	29,5836	-5,7672	-6	806	3	3	57		0,71	W2	3,3	41		1
DR of Congo	ZAI35	B	29,5836	-5,7672	-6	806	3	3	53		0,71	W2	3,3	38		1
DR of Congo	ZAI36	16	29,5836	-5,7672					56		0,7			39		1
DR of Congo	ZAI37	A	29,4183	-5,7347	545	255	3	3	67		0,7	W2	3,5	47		1
DR of Congo	ZAI38	B	29,4183	-5,7347	545	255	3	3	64		0,7	W2	3,5	46		1
DR of Congo	ZAI39	17	29,4183	-5,7347					66		0,7			46		1
DR of Congo	ZAI40	A	29,5342	-5,9178	78	722	3	3	73		0,8	W2	3,3	58		1
DR of Congo	ZAI41	B	29,5342	-5,9178	78	722	3	3	71		0,8	W2	3,3	56		1
DR of Congo	ZAI42	19	29,5342	-5,9178					81		0,7			57		1
DR of Congo	ZAI43	A	29,4500	-5,9667	435	365	2	2	213		0,7	W2	3,4	149		1
DR of Congo	ZAI44	B	29,4500	-5,9667	435	365	2	2	220		0,7	W2	3,4	154		1
DR of Congo	ZAI45	20	29,4500	-5,9667					216		0,7			151		1
Egypt	EGY1	Gulf of Suez	33,4500	28,1667		457	5198	110	27		2,7			72		Morgan_etal1985

Egypt	EGY2	Ayun Mousa BH-15	32,6800	29,8600		405	540	1	32		2,4			77	1	Morgan_etal1985
Egypt	EGY3	Abu El Darag	32,2400	29,4700		25	60		20		2,7			54	1	Morgan_etal1985
Egypt	EGY4	Hammam Pharoun	32,9600	29,2100		5	80		48		2,4			115	1	Morgan_etal1985
Egypt	EGY5	GS101-1	32,9500	29,1700		0	3381		27		2,7			73	4	Morgan_etal1985
Egypt	EGY6	GS101-1	32,9500	29,1700		1188	3381		31		2,7			57	3	Morgan_etal1985
Egypt	EGY7	E. Shagar-1	33,1000	28,1600		100	275		30		2,7			60	1	Morgan_etal1985
Egypt	EGY8	E. Shagar-1	33,1000	28,1600		275	450		18		2,7			49	1	Morgan_etal1985
Egypt	EGY9	Shagar-2	33,0900	28,1400		350	485		25		2,7			68	1	Morgan_etal1985
Egypt	EGY10	Ashrafi East	33,7000	27,7700		311	2047	4	32		2,7			87		Morgan_etal1985
Egypt	EGY11	Ashrafi West	33,6800	27,9000		328	3656	7	27		2,7			73		Morgan_etal1985
Egypt	EGY12	Wadi Mellaha	33,5600	27,5700		2240	3505	3	23		2,7			62		Morgan_etal1985
Egypt	EGY13	Abu Shiban	33,8400	27,4600		261	3807	6	29		2,7			79		Morgan_etal1985
Egypt	EGY14	RSO T 95	34,1800	27,4600		986	1897	5	35		2,7			95		Morgan_etal1985
Egypt	EGY15	RSO B 95	34,1800	26,6700		1148	3016	5	40		2,7			109		Morgan_etal1985
Egypt	EGY16	Hamrawein	34,0600	26,1900		20	65		29		3,25			96	1	Morgan_etal1985
Egypt	EGY17	Abu Shegala	34,2100	26,1700		65	160		30		2,4			80	1	Morgan_etal1983
Egypt	EGY18	Abu Shegala	34,2100	26,1700		175	235		50		2,1			105	1	Morgan_etal1983
Egypt	EGY19	Gabal Duwi	34,1300	26,0900		40	100		12		2,7			32	1	Morgan_etal1985
Egypt	EGY20	Abu Dabbab	34,5500	25,3333	250	20	200	8	29	45	3,2	1	1,7	92		Morgan&Swanberg1979
Egypt	EGY21	Neweibi	34,5167	25,2167	500	30	190	10	20	60	3,3			67		Morgan&Swanberg1979
Egypt	EGY22	Wadi Higlig	34,6833	25,2333	200	20	100	1	23		3,25	17	2,2	76		Morgan&Swanberg1979
Egypt	EGY23	Barramiya	33,7833	25,1000	400	50	300	1	17		4,4			73		Morgan&Swanberg1979
Egypt	EGY24	Sukkari	34,7000	24,9500	400	60	240	3	19	6	5,1			96		Morgan&Swanberg1979
Egypt	EGY25	Wadi Ghadir 1	34,9800	24,8200	80	20	150	1	55		3,25	11	2,4	179		Morgan&Swanberg1979
Egypt	EGY26	Wadi Ghadir 5	34,9500	24,7900		25	100	1	30		3,25			98		Morgan_etal1985
Egypt	EGY27	Wadi Ghadir 6	34,9000	24,8100		15	100	1	27		3,25			88		Morgan_etal1985
Egypt	EGY28	Wadi Ghadir 7	34,8700	24,8100		35	100	1	24		3,25			78		Morgan_etal1985
Egypt	EGY29	Abu Ghalaga	35,0600	24,3600		100	225	5	19	39	2,6			49		Morgan_etal1983
Egypt	EGY30	Umm Samiuki	34,9800	24,2300		25	140	2	19	36	3,2			61		Morgan_etal1983
Egypt	EGY31	Homr Akarem	34,0500	24,2167	400	45	120	2	18		3,25			57		Morgan&Swanberg1979
Egypt	EGY32	Gabbro Akarem	34,0000	24,0000		30	70	3	8		2,6			21		Morgan_etal1983
Egypt	EGY33	Genina El-Gharbiya	34,6300	23,9700		30	60	1	12		3,25			39		Morgan_etal1983
Egypt	EGY34	Berenice	35,5000	24,0000		35	100	1	22		3,25			70		Morgan_etal1983

Gomes et al. - Reappraisal of Heat Flow Variations in Mainland Africa.

Egypt	EGY35	Aswan	33,0000	24,0000	250	20	100	1	14		4,1	18	2,1	57		Morgan&Swanberg1979
Egypt	EGY36	Gemina	34,2500	24,0667	400				12		3,25			39	1	Morgan&Swanberg1979
Egypt	EGY37	Abu Tartur	30,0333	25,4333		10	235		19	6	2,2			41	4	Morgan_etal1976
Egypt	EGY38	III	28,8507	22,0462		39	109		10		2			20	1	Boulos1987
Egypt	EGY39	III	28,8507	22,0462		109	169		13		2			26	1	Boulos1987
Egypt	EGY40	IV A	28,2134	22,1574		54	154		5		2			10	1	Boulos1987
Egypt	EGY41	Vpr	28,7383	22,3004		24	94		10		2			20	1	Boulos1987
Egypt	EGY42	Vpr	28,7383	22,3004		94	184		13		2			26	1	Boulos1987
Egypt	EGY43	Vpr	28,7383	22,3004		184	219		10		2			21	1	Boulos1987
Egypt	EGY44	Vob	28,7506	22,3140		29	94		10		2			20	1	Boulos1987
Egypt	EGY45	Vob	28,7506	22,3140		94	249		14		2			27	1	Boulos1987
Egypt	EGY46	II	28,4778	22,5796		39	140		11		2			22	1	Boulos1987
Egypt	EGY47	VI A	28,1710	23,0200		54	94		12		2			23	1	Boulos1987
Egypt	EGY48	VI A	28,1710	23,0200		119	280		12		2			25	1	Boulos1987
Egypt	EGY49	PW7	32,7836	23,3075	183	40	90		12		3,3			40		Safanda_etal1995
Egypt	EGY50	G1	32,5669	23,3936	210	0	103		20		2,0			39		Safanda_etal1995
Egypt	EGY51	G2	32,5836	23,3958	197	0	88		27		2,0			55		Safanda_etal1995
Egypt	EGY52	K-S	32,6003	23,5169	179	35	118		16		3,3			53		Safanda_etal1995
Egypt	EGY53	DW1	32,6002	23,9275	193	90	170		18		3,3			60		Safanda_etal1995
Egypt	EGY54	West Kharga	30,2000	25,2100		100	430		15	4	2,8			43	1	Morgan_etal1983
Egypt	EGY55	Abu Tartur	30,0333	25,4333		25	145		74	6	2,2			163	8	Morgan_etal1976
Egypt	EGY56	Bakr well 73	32,9800	28,5000					57		2,7			154	1	Boulos1990
Egypt	EGY57	Asal No. 24	32,8400	29,4600		130	1130		60		2,7			162	1	Boulos1990
Ethiopia	ETH1	CALUB-1	44,5333	6,1500					23		2,5			57	1	Evans1976
Ethiopia	ETH2	MAGAN-1	44,2833	6,1000					21		2,5			52	1	Evans1976
Ethiopia	ETH3	GALLAF01	44,3500	5,6667					15		2,5			37	1	Evans1976
Ethiopia	ETH4	BOKH-1	46,9500	7,5000					17		2,5			42	1	Evans1976
Ethiopia	ETH5	IDOLE-1	46,0333	6,1667					17		2,5			43	1	Evans1976
Ethiopia	ETH6	ABRED-1	45,2500	5,5000					15		2,5			38	1	Evans1976
Ethiopia	ETH7	EL KURAN	42,8333	4,7000					16		2,5			39	1	Evans1976
Ghana	GHA1	Nasia	-0,6667	10,1667		100	420	33	8	3	5			45	1	Beck & Mustonen1972
Ghana	GHA2	Tobogona	-1,3333	9,5000		100	540	45	8	3	5			45	1	Beck & Mustonen1972

Ghana	GHA3	Yendi	0,0000	9,5000		100	310	22	8	3	5			45	1	Beck & Mustonen 1972
Ghana	GHA4	Prang	-1,0000	8,0000		140	350	39	21		1,9			40	1	Beck & Mustonen 1972
Ghana	GHA5	Prang	-1,0000	8,0000		380	480		27		1,9			50	1	Beck & Mustonen 1972
Kenya	KEN1	Garissa-1	39,8167	-0,3667		0	1208		35		2,3			79	1	Evans1976
Kenya	KEN2	Wal Merer-1	40,5833	-0,1167		1550	3789	6	40	55	2,4			95	1	Evans1976
Kenya	KEN3	Walu-2	40,2500	-1,6333		900	3716	5	27	52	1,8			46	1	Evans1976
Kenya	KEN4	Dodori-1	41,1833	-1,8167		600	4282	8	25	66	2			50	1	Evans1976
Kenya	KEN5	Pate-1	41,0833	-2,0667		1200	3735	3	28	50	1,8			49	1	Evans1976
Kenya	KEN6	Kipini-1	40,6000	-2,4000		1250	3632	3	22	48	1,7			37	1	Evans1976
Kenya	KEN7	C2031/NAIR2301	36,7833	-1,3167	1800	63	101	13	20		1,08			22	1	Williamson1976
Kenya	KEN8	C1297/NAIR1297	36,7667	-1,3000	1800	30	249	42	36		1,08			39	1	Williamson1976
Kenya	KEN9	C1093/NAIR1093	36,7833	-1,3000	1800	41	151	36	25		1,13			28	1	Williamson1976
Kenya	KEN10	C2099/NAKU2099	35,8167	-0,2333	2127	79	167	54	65	14	1,04			67	1	Morgan1973
Kenya	KEN11	C1944/NAKU1944	36,0667	-0,0667	1661	32	240	38	47	12	1,17			76	1	Williamson1976
Kenya	KEN12	C1765/NAKU1765	36,1167	-0,1333	1854	79	155	26	82	6	1,26			103	1	Williamson1976
Kenya	KEN13	C2601/NAKU2601	36,1333	-0,1667	2007	166	239	25	150	13	1,29			194	1	Williamson1976
Kenya	KEN14	C855/NAKU855	36,0000	-0,2833	1977	61	183	9	199	6	0,96			190	1	Williamson1976
Kenya	KEN15	C2311/NAKU2311	36,1833	0,1167	1525	31	79	25	54	5	1,48			118	1	Williamson1976
Kenya	KEN16	C3437/NRIF3437	36,2667	0,8000	1155	79	151	22	66	16	1,31			87	1	Morgan1973
Kenya	KEN17	C3461/NRIF3461	36,1500	1,0333	760	63	95	3	66		1,69			129	1	Williamson1976
Kenya	KEN18	C3470/NRIF3470	35,9667	1,0000	945	47	95	16	27		1,56			43	1	Williamson1976
Kenya	KEN19	C3498/ELDO3498	35,4833	0,6833	705	6	55	17	37	5	1,25			53	1	Williamson1976
Kenya	KEN20	C3698/ELDO3698	35,2167	0,7000	607	8	121	73	48	5	1,34			64	1	Morgan1973
Kenya	KEN21	C1846/ELDO1846	35,3167	0,5667	650	43	60	12	51		1,49			83	1	Williamson1976
Kenya	KEN22	C1780/ELDO178	35,2667	0,4833	2150	61	123	40	28		1,48			45	1	Morgan1973
Kenya	KEN23	C957/ERIF974	36,9000	-0,1000		41	114		15		1,5			22	1	Williamson1976
Kenya	KEN24	C2898/ERIF2898	36,8500	0,2000	1800	44	111	22	29		1,46			47	1	Williamson1976
Kenya	KEN25	C171/ERIF171	36,8167	0,2000	1830	31	80	11	23		1,46			45	1	Williamson1976
Kenya	KEN26	C3725/NFRO3725	38,1167	2,7667	850	31	79	4	34		1,77			59	1	Williamson1976
Kenya	KEN27	NFRO3133	38,3167	3,3500	670	31	221	13	17		4,7			78	1	Williamson1976
Kenya	KEN28	C3681/NFRO3681	37,9333	1,9667	535	31	47	3	30		1,76			53	1	Williamson1976
Kenya	KEN29	C3554/NFRO3554	37,8833	1,8667	500	117	136	13	20		1,9			43	1	Williamson1976
Kenya	KEN30	C3133/Kenya 16	38,1500	3,1833	850	31	221	13	17	1	5,25			102	1	Morgan1973
Kenya	KEN31	42	39,4000	-4,2000		97	133		21		3,4			71	1	Williamson1976
Kenya	KEN32	43	39,4100	-4,1900		42	66		16		3,4			54	1	Williamson1976

Gomes et al. - Reappraisal of Heat Flow Variations in Mainland Africa.

Kenya	KEN33	C4250	36,8167	-2,0833		95	168		17		3		51	1	Wheildon_etal1994
Kenya	KEN34	C4415	36,8167	-2,0833		44	136		12		3		35	1	Wheildon_etal1994
Kenya	KEN35	C4451	36,5833	-1,9000		32	177		14		1,9		27	1	Wheildon_etal1994
Kenya	KEN36	C4182	36,6000	-1,8833		31	98		9		1,9		17	1	Wheildon_etal1994
Kenya	KEN37	C4498	36,7333	-1,8000		73	98		18		1,9		35	1	Wheildon_etal1994
Kenya	KEN38	C4483	37,2667	-1,5333		32	69		9		2,4		21	1	Wheildon_etal1994
Kenya	KEN39	C4111	35,2667	-1,5000		31	124		24		2		58	1	Wheildon_etal1994
Kenya	KEN40	C4450	37,2167	-1,4833		32	124		14		2,4		33	1	Wheildon_etal1994
Kenya	KEN41	C4227	36,9500	-1,4667		62	115		17		1,6		26	1	Wheildon_etal1994
Kenya	KEN42	C4416	36,6667	-1,3667		63	184		20		1,9		38	1	Wheildon_etal1994
Kenya	KEN43	C4028	37,9833	-1,3667		110	146		21		2,4		50	1	Wheildon_etal1994
Kenya	KEN44	C4535	37,2167	-1,3167		38	86		5		2,4		11	1	Wheildon_etal1994
Kenya	KEN45	C4538	36,7333	-1,2667		10	73		20		1,9		38	1	Wheildon_etal1994
Kenya	KEN46	C4143	35,9333	-1,2167		31	186		64		1,4		90	1	Wheildon_etal1994
Kenya	KEN47	C4537	36,6333	-1,1167		85	149		20		1,9		38	1	Wheildon_etal1994
Kenya	KEN48	C4442	35,4000	-1,1000		32	119		18		1,4		25	1	Wheildon_etal1994
Kenya	KEN49	C4332	36,0500	-1,1000		66	191		50		1,4		68	1	Wheildon_etal1994
Kenya	KEN50	C3671	34,7167	-0,4833		15	91		20		1,5		30	1	Wheildon_etal1994
Kenya	KEN51	C1361	36,3600	-0,4000		192	223		65		1,1		70	1	Williamson1976
Kenya	KEN52	C1934	35,9400	-0,3400		121	158		25		1,2		29	1	Williamson1976
Kenya	KEN53	C2278	36,0600	-0,3100		73	104		53		1,3		69	1	Williamson1976
Kenya	KEN54	C2670	35,9167	-0,3000		60	110		56		1		56	1	Wheildon_etal1994
Kenya	KEN55	C4222	36,8500	-0,3000		37	119		24		1,8		42	1	Wheildon_etal1994
Kenya	KEN56	C3096	35,4300	-0,2800		115	151		70		1,2		83	1	Williamson1976
Kenya	KEN57	C3784	36,3833	-0,2667		52	89		58		1,1		64	1	Wheildon_etal1994
Kenya	KEN58	C4252	36,2833	-0,2500		31	183		25		1,6		39	1	Wheildon_etal1994
Kenya	KEN59	C2444	35,2600	-0,1400		60	85		21		1,3		27	1	Williamson1976

Kenya	KEN60	C3148	35,0333	-0,1333		18	54		56		1		27	1	Wheildon_etal1994
Kenya	KEN61	C3831	40,4900	-0,0600		110	133		36		2		72	1	Williamson1976
Kenya	KEN62	C2342	34,9300	-0,0500		15	85		45		2		90	1	Williamson1976
Kenya	KEN63	C3852	40,3700	0,0200		118	139		51		2		102	1	Williamson1976
Kenya	KEN64	C3770	39,9400	0,0400	230	144	160		28		2		57	1	Williamson1976
Kenya	KEN65	C3695	40,3100	0,1100		115	130		24		2		48	1	Williamson1976
Kenya	KEN66	C3142	35,4667	0,1833		165	213		15		1,5		22	1	Wheildon_etal1994
Kenya	KEN67	C3820	38,1300	0,3600	150	94	127		26		2		52	1	Williamson1976
Kenya	KEN68	C3154	35,3300	0,4000		80	173		30		1,6		48	1	Williamson1976
Kenya	KEN69	C3788	40,0200	0,4300		106	118		28		2,2		62	1	Williamson1976
Kenya	KEN70	C3619	35,3000	0,4500	2160	68	144		28	7	1,4		38	1	Williamson1976
Kenya	KEN71	C3728	37,0500	0,6667	1280	98	151		13	15	2,7		35	1	Williamson1976
Kenya	KEN72	C3804	39,4700	0,7000	300	137	156		28		2		56	1	Williamson1976
Kenya	KEN73	C3792	39,6167	0,7667		97	113		14		2		28	1	Wheildon_etal1994
Kenya	KEN74	C4135	36,5833	1,8000		31	157		26		1,9		51	1	Wheildon_etal1994
Kenya	KEN75	C3724	38,1000	2,2500		160	175		16		1,5		24	1	Wheildon_etal1994
Kenya	KEN76	C3793	38,2800	3,1200		224	249		25		1,5		38	1	Williamson1976
Lesotho	LES1	BTR102	28,4800	-29,1700	2175	138	176	5	44	30	1,74		77	1	Jones1992
Lesotho	LES2	BTR123	28,4783	-29,1417	2256	100	320	12	45	30	1,74		78	1	Jones1992
Lesotho	LES3	BTR129	28,4467	-28,9250	2026	87	150	5	54	16	1,76		95	1	Jones1992
Lesotho	LES4	BTR112	28,4783	-28,8500	2050	90	200	12	46	18	1,85		85	1	Jones1992
Lesotho	LES5	BTR113	28,4733	-28,8167	2100	113	263	9	33	25	1,72		57	1	Jones1992
Lesotho	LES6	DTR210	28,4550	-28,7050	1861	60	130	4	22	14	2,04		45	1	Jones1992
Lesotho	LES7	DTR210	28,4550	-28,7050	1861	130	197	4	15	16	3,47		52	1	Jones1992
Lesotho	LES8	DTR202	28,4383	-28,6317	1841	120	160	3	15	21	2,6		39	1	Jones1992
Lesotho	LES9	DTR103	28,4367	-29,5833	1872	150	220	8	17		2,6		44	1	Jones1992
Lesotho	LES10	DTR118	28,4317	-29,5050	1843	60	120	7	18		2,6		47	1	Jones1992
Lesotho	LES11	DTR119	28,4267	-29,4917	1855	50	110	7	23		2,6		60	1	Jones1992
Lesotho	LES12	DTR121	28,4183	-29,4783	1837	28	94	8	16		2,6		42	1	Jones1992
Lesotho	LES13	DTR134	28,4167	-29,4733	1823	20	80	6	12		2,6		31	1	Jones1992
Liberia	LIB1	KALANA	-8,1667	5,3333		60	418		9	0	3,2		29		85
Liberia	LIB2	KALANA	-8,1667	5,0833		70	212		11	2	3,2		35		85
Liberia	LIB3	KALANA	-8,1667	5,0000		60	157		11	0	3,2		35		85
Liberia	LIB4	KALANA	-8,1669	5,3333		30	125		12	1	3,1		38		85

Gomes et al. - Reappraisal of Heat Flow Variations in Mainland Africa.

Liberia	LIB5	KALANA	-8,1669	5,1500					13		2,5			33	6	85
Liberia	LIB6	KALANA	-8,1675	5,0833		75	165		10	2	3			30		85
Liberia	LIB7	KALANA	-8,1681	5,0667		78	185		13	1	3,1			40		85
Liberia	LIB8	BONG B-1	-10,3333	6,8167	317	80	120		7	8	7,7	2	0,2	58	1	80
Liberia	LIB9	TOKA H50	-8,6667	7,4500	740	104	125		10	9	5,4	2	0,3	54	1	80
Liberia	LIB10	TOKA H51	-8,6667	7,4500	763	145	173		10	8	5	2	0,3	54	1	80
Liberia	LIB11	YULL Y28	-8,6333	7,5667	687	197	229		14	10	5,8	2	0,3	58	1	80
Liberia	LIB12	PUTU	-8,2000	5,6667	495	78	120		8	22	6,6	2	0,3	54	1	80
Libya	LAJ1	Sirt Basin 44	20,9400	26,4900	211		1891	2	20		3		4,8	63		Nyblade et al. 1996
Libya	LAJ2	Sirt Basin 33	21,3200	26,7200	181		1409	2	23		3,3		5,8	79		Nyblade et al. 1996
Libya	LAJ3	Sirt Basin 61	20,1600	26,8000	237		1168	2	20		3		3	63		Nyblade et al. 1996
Libya	LAJ4	Sirt Basin 34	20,0700	26,8500	242		1360	2	19		3,3			66		Nyblade et al. 1996
Libya	LAJ5	Sirt Basin 32	20,8000	27,0300	196		1518	3	27		2,9			84		Nyblade et al. 1996
Libya	LAJ6	Sirt Basin 35	19,1400	27,0600	262		2887	2	26		2,8		1,7	84		Nyblade et al. 1996
Libya	LAJ7	Sirt Basin 48	19,0200	27,2300	277		3405	3	25		2,6		4,3	75		Nyblade et al. 1996
Libya	LAJ8	Sirt Basin 47	19,5800	27,5000	222		2061	3	21		2,5		1,1	58		Nyblade et al. 1996
Libya	LAJ9	Sirt Basin 43	22,0700	27,5000	200		2749	3	23		2,6			65		Nyblade et al. 1996
Libya	LAJ10	Sirt Basin 46	19,2600	27,5600	200		2386	3	24		2,7			70		Nyblade et al. 1996
Libya	LAJ11	Sirt Basin 42	22,5200	27,6400	120		2770	3	23		2,7			68		Nyblade et al. 1996
Libya	LAJ12	Sirt Basin 45	19,7500	27,6800	211		2221	3	20		2,9			61		Nyblade et al. 1996
Libya	LAJ13	Sirt Basin 63	19,9800	27,7800	250		2022	3	17		3,2			58		Nyblade et al. 1996
Libya	LAJ14	Sirt Basin 51	20,1500	27,9000	186		2078	3	23		2,7			68		Nyblade et al. 1996
Libya	LAJ15	Sirt Basin 36	20,0400	27,9400	217		1985	2	24		3			78		Nyblade et al. 1996
Libya	LAJ16	Sirt Basin 62	20,9000	27,9900	165		38274	3	21		2,4		0,8	58		Nyblade et al. 1996
Libya	LAJ17	Sirt Basin 54	21,4700	28,0300	130		3042	3	21		2,8		1,8	64		Nyblade et al. 1996
Libya	LAJ18	Sirt Basin 64	21,1800	28,0800	150		4190	3	19		2,6		1,2	60		Nyblade et al. 1996
Libya	LAJ19	Sirt Basin 53	21,4700	28,0800	134		3266	3	21		2,8		3,2	70		Nyblade et al. 1996
Libya	LAJ20	Sirt Basin 59	18,8000	28,0900	246		2195	3	22		2,9		3,7	70		Nyblade et al. 1996

Gomes et al. - Reappraisal of Heat Flow Variations in Mainland Africa.

Libya	LAJ21	Sirt Basin 55	19,0700	28,1600	211		2044	2	24		3,1		81		Nyblade et al. 1996
Libya	LAJ22	Sirt Basin 60	20,5600	28,2100	202		2832	3	24		2,6		70		Nyblade et al. 1996
Libya	LAJ23	Sirt Basin 65	19,7200	28,3000	187		3876	3	25		2,8		81		Nyblade et al. 1996
Libya	LAJ24	Sirt Basin 49	20,3500	28,3100	218		3015	3	24		2,7	5,7	73		Nyblade et al. 1996
Libya	LAJ25	Sirt Basin 52	18,8600	28,3200	211		2239	2	23		3		78		Nyblade et al. 1996
Libya	LAJ26	Sirt Basin 28	19,4800	28,5700	175		2774	3	23		2,8		70		Nyblade et al. 1996
Libya	LAJ27	Sirt Basin 66	21,6500	28,6100	100		3409	3	21		3		72		Nyblade et al. 1996
Libya	LAJ28	Sirt Basin 5	20,1800	28,6600	143		2863	2	21		2,3		53		Nyblade et al. 1996
Libya	LAJ29	Sirt Basin 39	20,8300	28,7200	123		3147	3	24		2,4		67		Nyblade et al. 1996
Libya	LAJ30	Sirt Basin 40	21,1500	28,7200	115		3443	3	29		2,6		91		Nyblade et al. 1996
Libya	LAJ31	Sirt Basin 25	19,6400	28,7500	184		3511	4	25		2,5		75		Nyblade et al. 1996
Libya	LAJ32	Sirt Basin 50	17,9200	28,7700	254		1829	2	29		2,5	3,1	78		Nyblade et al. 1996
Libya	LAJ33	Sirt Basin 13	20,2000	28,7900	140		2913	2	21		2,6		60		Nyblade et al. 1996
Libya	LAJ34	Sirt Basin 23	21,2100	28,8000	98		2886	4	28		2,3	2,8	71		Nyblade et al. 1996
Libya	LAJ35	Sirt Basin 14	19,7400	28,8100	185		3861	4	26		2,6		81		Nyblade et al. 1996
Libya	LAJ36	Sirt Basin 21	20,7200	28,8300	115		3844	6	25		2,5		75		Nyblade et al. 1996
Libya	LAJ37	Sirt Basin 12	19,8900	28,8600	158		2422	3	29		2,8		59		Nyblade et al. 1996
Libya	LAJ38	Sirt Basin 38	20,9500	28,9000	120		3024	2	25		2,7		76		Nyblade et al. 1996
Libya	LAJ39	Sirt Basin 3	19,8000	28,9100	128		1729	6	23		2,7		65		Nyblade et al. 1996
Libya	LAJ40	Sirt Basin 10	20,1900	28,9100	137		3051	2	21		2,4		62		Nyblade et al. 1996
Libya	LAJ41	Sirt Basin 37	21,4600	29,0200	63		3019	2	23		3,1		81		Nyblade et al. 1996
Libya	LAJ42	Sirt Basin 41	20,7200	29,0400	102		4068	3	25		2,7		78		Nyblade et al. 1996
Libya	LAJ43	Sirt Basin 22	20,9500	29,1800	78		3874	4	24		2,6	4,7	75		Nyblade et al. 1996
Libya	LAJ44	Sirt Basin 11	19,7000	29,2200	183		2782	2	33		2,3		87		Nyblade et al. 1996
Libya	LAJ45	Sirt Basin 8	20,3100	29,3400	73		4477	4	29		2,3		81		Nyblade et al. 1996
Libya	LAJ46	Sirt Basin 9	20,5600	29,3600	64		4405	3	25		2,1		63		Nyblade et al. 1996

Gomes et al. - Reappraisal of Heat Flow Variations in Mainland Africa.

Libya	LAJ47	Sirt Basin 26	19,2100	29,3700	77		3866	3	29		2,1		74	Nyblade et al. 1996
Libya	LAJ48	Sirt Basin 15	17,9700	29,3900	283		2647	5	24		2,9		75	Nyblade et al. 1996
Libya	LAJ49	Sirt Basin 20	21,0200	29,5200	39		3344	3	22		2,8		76	Nyblade et al. 1996
Libya	LAJ50	Sirt Basin 18	18,2500	29,7000	169		1845	2	33		2,4		84	Nyblade et al. 1996
Libya	LAJ51	Sirt Basin 24	21,1200	29,7400	-4		3604	3	20		2,7		62	Nyblade et al. 1996
Libya	LAJ52	Sirt Basin 58	17,5500	29,7700	336		1831	3	28		2,8		84	Nyblade et al. 1996
Libya	LAJ53	Sirt Basin 31	17,2700	29,7900	247		2815	6	31		2,5		88	Nyblade et al. 1996
Libya	LAJ54	Sirt Basin 30	18,4200	29,8100	251		1821	3	31		2,2		73	Nyblade et al. 1996
Libya	LAJ55	Sirt Basin 57	17,5800	29,8700	282		1806	3	32		2,5		85	Nyblade et al. 1996
Libya	LAJ56	Sirt Basin 19	18,2100	29,8700	283		2095	3	32		2,4		82	Nyblade et al. 1996
Libya	LAJ57	Sirt Basin 7	19,2100	30,0000	-9		2608	3	24		2,4		65	Nyblade et al. 1996
Libya	LAJ58	Sirt Basin 56	17,5500	30,0200	243		2545	4	33		2,4		86	Nyblade et al. 1996
Libya	LAJ59	Sirt Basin 16	18,3100	30,0200	205		2180	3	24		2,7		70	Nyblade et al. 1996
Libya	LAJ60	Sirt Basin 29	18,4700	30,0300	153		2373	2	26		2,5		73	Nyblade et al. 1996
Libya	LAJ61	Sirt Basin 2	19,4700	30,0600	31		2709	3	34		2		76	Nyblade et al. 1996
Libya	LAJ62	Sirt Basin 1	18,7300	30,0800	70		3350	3	15		2,9		49	Nyblade et al. 1996
Libya	LAJ63	Sirt Basin 17	18,0000	30,1800	169		2273	4	29		2,4		77	Nyblade et al. 1996
Libya	LAJ64	Sirt Basin 4	20,3400	30,2800	36		3522	3	26		2,3		71	Nyblade et al. 1996
Libya	LAJ65	Sirt Basin 6	19,7100	30,3000	15		4592	5	28		2,2		73	Nyblade et al. 1996
Libya	LAJ66	Sirt Basin 27	18,5100	30,4800	40		2448	3	28		2,3		69	Nyblade et al. 1996
Malawi	MAA1	NY- 4	34,4000	-11,5000	-17	490	1,7		56	0	0,7		39	1
Malawi	MAA2		34,4000	-11,5000					84		0,7		59	
Malawi	MAA3	NY- 6	34,3167	-11,1000	-207	680	1,7		50	0	0,7		35	1
Malawi	MAA4	NY- 7	34,3667	-11,0833	-207	680	1,7		20	0	0,7		14	1
Malawi	MAA5	NY-11B	34,3500	-10,5000	83	390	1,7		26	0	0,7		18	1
Malawi	MAA6	NY-15	34,3167	-11,2833	-147	620	1,7		19	0	0,7		13	1
Malawi	MAA7	NY-16	34,5000	-11,7500	103	370	1,7		144	0	0,7		101	1
Malawi	MAA8		34,5000	-11,7500					207		0,7		145	

Malawi	MAA9	NY-17	34,4333	-11,9000	93	380	1,7		97	0	0,7			68		1
Malawi	MAA10		34,4333	-11,9000					139		0,7			97		
Malawi	MAA11	NY-19	34,3833	-12,3000	163	310	1,7		114	4	0,64			73		1
Mali	MAL1	KODIERAN	-8,1733	10,8333		39	196	17	15		3,7			55		Brigaud_etal1985
Mali	MAL2	KODIERAN	-8,1667	10,8333		60	158	11	11		3,1			35		Brigaud_etal1985
Mali	MAL3	KODIERAN	-8,1717	10,8383		20	164	16	10		3,1			30		Brigaud_etal1985
Mali	MAL4	KODIERAN	-8,1750	10,8400		68	194	14	13		3,1			40		Brigaud_etal1985
Mali	MAL5	KODIERAN	-8,1667	10,8417		68	213	16	11		3,2			35		Brigaud_etal1985
Mali	MAL6	MANAN	-10,4167	13,1667					12		2,5			30		Brigaud_etal1985
Mali	MAL7	MW5	2,9067	18,4533	440	20	95	9	14		3,8			53		Brigaud_etal1985
Mali	MAL8	ATOUILA	-3,9083	20,8383					24		2,5			59		Brigaud_etal1985
Mali	MAL9	In Imanal Im06	-0,0833	20,0833		80	205		23	2	3			68	1	Brigaud_etal1985
Mali	MAL10	Ansongo Anl	0,5688	15,9351		0	1700		12		3			36	1	Brigaud_etal1985
Mali	MAL11	Yarba Yar1	-2,7354	19,2000		0	2300		15		2,5			38	1	Brigaud_etal1985
Mali	MAL12	In Imanal Az01	-0,0833	20,0833		40	100		32	2	3			96	1	Brigaud_etal1985
Mali	MAL13	Ouasa Oua1	-7,8001	11,1834		0	3500		12		3			35	1	Brigaud_etal1985
Mali	MAL14	In Tahat HW5	2,6238	18,4862	440	20	95		14		3			53	1	Lesquer_etal1989
Mauritania	MAU1	Idini BM45	-15,2500	17,9900	30	50	90		28		2,5			70		Lesquer_etal1991
Mauritania	MAU2	Idini F2	-15,2500	17,9900	15	40	80		22		2,4			52		Lesquer_etal1991
Mauritania	MAU3	Idini F3	-15,2500	17,9900	15	38	84		24		2,6			62		Lesquer_etal1991
Mauritania	MAU4	Idini F4	-15,2500	17,9900	15	45	90		22		2,6			58		Lesquer_etal1991
Mauritania	MAU5	Idini SE4	-15,2500	17,9900	15	40	110		22		2,3			51		Lesquer_etal1991
Mauritania	MAU6	Atar AMDER	-13,0300	20,4800	240	20	200		28		2,1			60		Lesquer_etal1991
Mauritania	MAU7	Atar SOUEIGUYA	-13,0300	20,4800	200	20	85		5		2,1			29		Lesquer_etal1991
Mauritania	MAU8	Atar SOUEIGUYA	-13,0300	20,4800	200	85	100		13		1,8			24		Lesquer_etal1991
Mauritania	MAU9	Zouerate AOC5	-12,3305	22,5524	327	70	115		14		3,7			53		Lesquer_etal1991
Mauritania	MAU10	Zouerate AOC5	-12,3305	22,5524	327	115	150		19		2,7			51		Lesquer_etal1991
Mauritania	MAU11	Zouerate KHOC4b	-12,4532	22,5870	360	50	115		7		4,7			33		Lesquer_etal1991
Mauritania	MAU12	Zouerate KHOC4b	-12,4532	22,5870	360	140	190		7		5			35		Lesquer_etal1991
Mauritania	MAU13	Zouerate BLOC8	-12,4462	22,6115	403	90	230		9		7			63		Lesquer_etal1991
Mauritania	MAU14	Zouerate GOE1	-12,3785	22,6152	413	90	130		8		4,7			38		Lesquer_etal1991
Mauritania	MAU15	Zouerate GOE1	-12,3785	22,6152	413	130	195		15		3,4			51		Lesquer_etal1991
Mauritania	MAU16	Zouerate CHROC1	-12,4918	22,6279	420	40	11		7		7			49		Lesquer_etal1991
Mauritania	MAU17	Zouerate CHROC3	-12,4713	22,6297	420	50	165		7		7			49		Lesquer_etal1991
Mauritania	MAU18	Zouerate BLOC4	-12,4422	22,6306	429	60	140		7		7			49		Lesquer_etal1991
Mauritania	MAU19	Zouerate BLOC5	-12,4407	22,6561	403	90	170		9		7			63		Lesquer_etal1991
Mauritania	MAU20	Zouerate TSOP17	-12,0725	22,8635	330	40	95		21		2,7			57		Lesquer_etal1991

Gomes et al. - Reappraisal of Heat Flow Variations in Mainland Africa.

Mauritania	MAU21	Zouerate TSOP18	-12,0725	22,8635		40	100		20		2,7			54		Lesquer_etal1991
Mauritania	MAU22	Zouerate WS3	-12,0505	22,9599	380	40	80		16		5			80		Lesquer_etal1991
Mauritania	MAU23	Zouerate WS3	-12,0505	22,9599	380	80	110		8		9,5			76		Lesquer_etal1991
Mauritania	MAU24	Zouerate WS18	-12,0733	22,9936	360	40	80		7		9,5			66		Lesquer_etal1991
Mauritania	MAU25	Zouerate WS18	-12,0733	22,9936	360	80	110		11		7			77		Lesquer_etal1991
Morocco	MOR1	AZC 1/AC1	-6,7400	30,5169	1310	40	120		14	2	2,7			36	1	Rimi&Lucazeau1987
Morocco	MOR2	AZC 2	-6,7467	30,5150	1315	30	170		14	4	2,7			38	1	Rimi&Lucazeau1987
Morocco	MOR3	AZC 5/AC3	-6,7569	30,5150	1300	80	160		12	1	2,31			38	1	Rimi&Lucazeau1987
Morocco	MOR4	AZC 6/AC4	-6,7400	30,5131	1290	65	195		16	2	3			48	1	Rimi&Lucazeau1987
Morocco	MOR5	4500	-6,6519	32,5569		90	160		50		2			100	1	Rimi&Lucazeau1987
Morocco	MOR6	3869	-7,0150	32,4119		45	95		24		1,99			48	1	Rimi&Lucazeau1987
Morocco	MOR7	2586	-6,5900	32,2700	-84	100	240		27		2,14			58	1	Rimi&Lucazeau1987
Morocco	MOR8	2153	-6,4969	32,5381		50	175		27		2,02			54	1	Rimi&Lucazeau1987
Morocco	MOR9	PR22/P22	-6,0031	34,4081	16	50	110		20	1	1,84			37	1	Rimi&Lucazeau1987
Morocco	MOR10	PR51/P5	-5,9000	34,3431	20	60	110		26		1,98			51	1	Rimi&Lucazeau1987
Morocco	MOR11	2368/15	-5,2600	33,8500		100	250		34		2,03			69	1	Rimi&Lucazeau1987
Morocco	MOR12	SL7	-4,6028	33,8350		70	120		20		3,38			68	1	Rimi&Lucazeau1987
Morocco	MOR13	SL 10/S10	-4,6100	33,8619		60	95		38		1,8			68	1	Rimi&Lucazeau1987
Morocco	MOR14	S 17	-4,6450	33,9700		60	180		17		3,4			56	1	Rimi&Lucazeau1987
Morocco	MOR15	S 17	-4,6450	33,9700		60	180		17	1	6,4			106	1	Rimi&Lucazeau1987
Morocco	MOR16	S 18	-4,6469	33,9469		50	150		42		2,21			93	1	Rimi&Lucazeau1987
Morocco	MOR17	S 18	-4,6469	33,9469		50	150		42	3	1,6			67	1	Rimi&Lucazeau1987
Morocco	MOR18	S 16	-4,6219	33,9769		30	230		10		6,4			64	1	Rimi&Lucazeau1987
Morocco	MOR19	S 16	-4,6219	33,9769		30	230		10	1	3,42			34	1	Rimi&Lucazeau1987
Morocco	MOR20	411	-9,5733	31,3467	207	20	60		52		1,97			103	1	Rimi&Lucazeau1987
Morocco	MOR21	611	-9,5733	31,3483	270	20	85		32		1,96			63	1	Rimi&Lucazeau1987
Morocco	MOR22	2952/12	-1,8250	34,6969	560	30	300		56		2,02			113	1	Rimi&Lucazeau1987

Morocco	MOR23	2362/12	-1,9369	34,6500		50	215		39		2,01		78	1	Rimi&Lucazeau1987
Morocco	MOR24	2362/12	-1,9369	34,6500		50	215		39		2,4		95	1	Rimi&Lucazeau1987
Morocco	MOR25	1199/12	-1,9700	34,6431	641	80	125		34		2,65		90	1	Rimi&Lucazeau1987
Morocco	MOR26	1225/12	-1,9367	34,7850		40	75		50		1,96		98	1	Rimi&Lucazeau1987
Morocco	MOR27	2899/12	-1,8531	34,6450	620	60	128		14	1	6,33		89	1	Rimi&Lucazeau1987
Morocco	MOR28	186/16	-1,9181	34,0169	1051	90	120		28		1,99		56	1	Rimi&Lucazeau1987
Morocco	MOR29	A 4	-2,2319	34,3069	1068	60	90		31		2,73		85	1	Rimi&Lucazeau1987
Morocco	MOR30	A 13	-2,2369	34,3131	1095	140	170		23	1	5,18		119	1	Rimi&Lucazeau1987
Morocco	MOR31	A 14	-2,2431	34,3119		100	170		17		5,18		88	1	Rimi&Lucazeau1987
Morocco	MOR32	A 7	-2,2269	34,3019		80	140		24		5,18		124	1	Rimi&Lucazeau1987
Morocco	MOR33	P 3	-2,2381	34,3119		100	240		32	1	2,13		68	1	Rimi&Lucazeau1987
Morocco	MOR34	BR41W/BRW	-1,8131	34,4500	1058	80	170		45		3,95		178	1	Rimi&Lucazeau1987
Morocco	MOR35	BR41W/BRW	-1,8131	34,4500	1058	80	170		45		2,44		110	1	Rimi&Lucazeau1987
Morocco	MOR36	TEFAOIS/TFD	-1,7869	34,5100	1125	30	100		47	4	2,39		112	1	Rimi&Lucazeau1987
Morocco	MOR37	BN 30	-1,7981	34,4450	1050	30	80		43	4	2,38		102	1	Rimi&Lucazeau1987
Morocco	MOR38	DBY1	-8,7733	32,6300			2849	5	22		2,5		54		Rimi&Lucazeau1987
Morocco	MOR39	OML	-9,8681	28,0939		199	3571	5	33	10	2,5		83		Rimi1990
Morocco	MOR40	CHK	-11,6406	28,1961		312	4200	3	22	7	2,5		54		Rimi1990
Morocco	MOR41	FM1	-8,9578	28,7925		277	1770	2	34	10	2,5		86		Rimi1990
Morocco	MOR42	SSS	-9,8708	30,4258		434	2649	3	33	16	2,5		82		Rimi1990
Morocco	MOR43	MCN	-9,9417	30,4339		1336	3501	5	33	14	2,5		83		Rimi1990
Morocco	MOR44	TGA	-9,4650	30,4431	290	1517	4083	5	30	15	2,5		75		Rimi1990
Morocco	MOR45	AZC 5/AC3	-6,7569	30,5150	1300	160	200		15	1	3,26		49	1	Rimi&Lucazeau1987
Morocco	MOR46	TT1/TAT1	-9,7400	31,2581		2094	3571	3	22	10	2,5		56		Rimi1990
Morocco	MOR47	RH8	-9,5119	31,2881	670	1680	1680	1	24	14	2,5		61		Rimi1990
Morocco	MOR48	ZL2	-9,3969	31,3081		1358	2775	3	24	12	2,5		61		Rimi1990
Morocco	MOR49	TFT	-9,1619	31,3111	897	858	2042	3	27	16	2,5		68		Rimi1990
Morocco	MOR50	TB2	-9,7950	31,3211	10	1401	2351	2	27	8	2,5		67		Rimi1990
Morocco	MOR51	ZL1	-9,3961	31,3231	553	2301	4319	6	25	19	2,5		63		Rimi1990

Gomes et al. - Reappraisal of Heat Flow Variations in Mainland Africa.

Morocco	MOR52	JJ1	-9,5939	31,3400	292	2972	2972	1	22	18	2,5			55		Rimi1990
Morocco	MOR53	KBF	-9,1539	31,3569		1056	2341	3	25	13	2,5			63		Rimi1990
Morocco	MOR54	IMD	-9,6161	31,3611	283	1770	2640	2	26	19	2,5			65		Rimi1990
Morocco	MOR55	M14/MKL104	-9,4469	31,4019	424	2609	4270	7	26	25	2,5			65		Rimi1990
Morocco	MOR56	JRP/BJRP1	-9,2300	31,4050	731	191	4222	5	24	20	2,5			60		Rimi1990
Morocco	MOR57	JML	-9,6400	31,4061	146	1446	4281	3	27	13	2,5			67		Rimi1990
Morocco	MOR58	JR2	-9,2461	31,4089	700	1500	1952	2	25	12	2,5			63		Rimi1990
Morocco	MOR59	MK1	-9,4492	31,4103	442	1415	4050	6	28	15	2,5			71		Rimi1990
Morocco	MOR60	ND4	-9,1489	31,4119		1058	1851	2	25	9	2,5			62		Rimi1990
Morocco	MOR61	TGT	-9,5469	31,4150	245	2076	3710	2	30	18	2,5			74		Rimi1990
Morocco	MOR62	M18	-9,4500	31,4231		1370	2815	2	29	9	2,5			73		Rimi1990
Morocco	MOR63	M13	-9,4439	31,4289	455	2460	3774	4	24	20	2,5			60		Rimi1990
Morocco	MOR64	ND3	-9,1589	31,4350		1738	1785	2	25	10	2,5			62		Rimi1990
Morocco	MOR65	M17	-9,4519	31,4389		1377	2752	2	34	14	2,5			86		Rimi1990
Morocco	MOR66	M11/MKL101	-9,4517	31,4439	424	1148	3819	6	26	25	2,5			65		Rimi1990
Morocco	MOR67	M15/MKL105	-9,4681	31,4450	460	2585	4342	7	24	22	2,5			60		Rimi1990
Morocco	MOR68	M12/MKL102	-9,4481	31,4450	429	2333	4825	10	25	25	2,5			63		Rimi1990
Morocco	MOR69	M16	-9,4311	31,4467	443	2700	4150	4	26	18	2,5			65		Rimi1990
Morocco	MOR70	ND2/NDK2	-9,1639	31,4519	613	1686	3497	5	28	10	2,5			71		Rimi1990
Morocco	MOR71	M19	-9,4519	31,4561	394	1186	3657	3	25	14	2,5			62		Rimi1990
Morocco	MOR72	G3T	-9,5769	31,4789	240	989	1806	3	24	12	2,5			61		Rimi1990
Morocco	MOR73	GT3	-9,5231	31,4811	503	358	2272	4	26	17	2,5			65		Rimi1990
Morocco	MOR74	KE4	-9,3450	31,4939		1473	1610	3	24	15	2,5			61		Rimi1990
Morocco	MOR75	TKM	-9,4869	31,4994		2402	4341	4	27	14	2,5			68		Rimi1990
Morocco	MOR76	OTA/OTA3	-9,5819	31,5981	160	1808	3770	6	26	14	2,5			65		Rimi1990
Morocco	MOR77	DR2	-9,3469	31,6219	455	596	1584	2	26	8	2,5			64		Rimi1990
Morocco	MOR78	BNB	-3,7619	31,7900		2432	3764	3	33	7	2,5			83		Rimi1990
Morocco	MOR79	MAC/MAC1	-9,3978	31,9350	134	1067	3736	4	26	11	2,5			65		Rimi1990
Morocco	MOR80	BHL	-8,3381	32,0050	164	547	2272	4	28	11	2,5			70		Rimi1990
Morocco	MOR81	KMS	-6,8431	32,2019		1345	2170	3	27	5	2,5			68		Rimi1990
Morocco	MOR82	2586	-6,5900	32,2700	-84	240	315		18		2,5			46	1	Rimi& Lucazeau1987
Morocco	MOR83	DOT	-9,1450	32,2819	142	2093	2129	3	23	24	2,5			57		Rimi1990
Morocco	MOR84	DKL	-9,1131	32,3531	140	1776	2541	3	25	12	2,5			63		Rimi1990
Morocco	MOR85	3869	-7,0150	32,4119		95	240		36		2,02			73	1	Rimi& Lucazeau1987
Morocco	MOR86	3869	-7,0150	32,4119		240	395		20		2,65			53	1	Rimi& Lucazeau1987

Gomes et al. - Reappraisal of Heat Flow Variations in Mainland Africa.

Morocco	MOR87	OZN	-8,9200	32,4819		2472	2472	1	22	11	2,5			56		Rimi1990
Morocco	MOR88	BJ7	-6,7369	32,5050	433	688	688	1	25	7	2,5			63		Rimi1990
Morocco	MOR89	EB1	-8,9589	32,5339		1187	3345	6	24	23	2,5			61		Rimi1990
Morocco	MOR90	2153	-6,4969	32,5381		175	215		40		2,04			82	1	Rimi&Lucazeau1987
Morocco	MOR91	2153	-6,4969	32,5381		215	295		20		2,19			44	1	Rimi&Lucazeau1987
Morocco	MOR92	OYB	-8,7731	32,5467		430	2906	5	22	16	2,5			56		Rimi1990
Morocco	MOR93	4500	-6,6519	32,5569		160	230		23		2,16			50	1	Rimi&Lucazeau1987
Morocco	MOR94	KT2	-6,4600	32,5589		1417	2893	2	26	22	2,5			65		Rimi1990
Morocco	MOR95	BJ8	-6,6411	32,5711	418	969	969	1	17,2	7	2,5			43		Rimi1990
Morocco	MOR96	BJ9	-6,3581	32,5800	477	751	751	1	24,8	8	2,5			62		Rimi1990
Morocco	MOR97	EB2/EAB2	-8,9450	32,5869		1306	1306	1	29,2	5	2,5			73		Rimi1990
Morocco	MOR98	BJ2	-6,1269	32,6039	597	1000	1000	1	24	9	2,5			60		Rimi1990
Morocco	MOR99	KT1	-6,3428	32,6081		1341	1341	1	24	9	2,5			60		Rimi1990
Morocco	MOR100	KB2/KSB102	-4,2381	32,6681	1395	1052	2171	3	15,6	6	2,5			39		Rimi1990
Morocco	MOR101	OBZ/OBZ1	-8,6719	32,7019		984	984	1	32	4	2,5			80		Rimi1990
Morocco	MOR102	KB1/KSB101	-3,9819	32,8400		1822	1822	1	27,6	8	2,5			69		Rimi1990
Morocco	MOR103	TE3	-2,3250	32,9150	1533	1324	4210	5	27,6	12	2,5			69		Rimi1990
Morocco	MOR104	TE1	-2,3989	32,9539		638	3141	4	21,2	17	2,5			53		Rimi1990
Morocco	MOR105	RR1	-3,2119	33,0211		1000	2792	5	21	7	2,5			47		Rimi1990
Morocco	MOR106	TE2	-1,9769	33,1500	1320	461	2700	3	22	16	2,5			56		Rimi1990
Morocco	MOR107	JKT	-1,7839	33,6289	1072	1921	2964	2	36	10	2,5			91		Rimi1990
Morocco	MOR108	gd2	-5,4600	33,6600				5	30		2,2			65		Rimi et al. 1998
Morocco	MOR109	SL7	-4,6028	33,8350		120	250		47		1,8			85	1	Rimi&Lucazeau1987
Morocco	MOR110	2368/15	-5,2600	33,8500		250	350		21		2,34			49	1	Rimi&Lucazeau1987
Morocco	MOR111	SL9	-4,6031	33,8569	731	50	120		49	1	1,8			88	1	Rimi1990
Morocco	MOR112	al6	-5,7370	33,8760				1	36		1,6			58		Rimi et al. 1998
Morocco	MOR113	oo1	-5,4780	33,8850				1	31		1,7			52		Rimi et al. 1998
Morocco	MOR114	ss1	-5,3581	33,9089		1007	1034	2	26	6	1,7			44		Rimi et al. 1998
Morocco	MOR115	am	-5,7300	33,9200				5	40		1,7			67		Rimi et al. 1998
Morocco	MOR116	of	-5,7100	33,9390				7	28		2,4			67		Rimi et al. 1998
Morocco	MOR117	dc1	-5,4160	33,9500				1	28		1,8			50		Rimi et al. 1998

Gomes et al. - Reappraisal of Heat Flow Variations in Mainland Africa.

Morocco	MOR118	bh	-5,7630	33,9870				2	49		1,6			79		Rimi et al. 1998
Morocco	MOR119	mam2	-6,5440	33,9960				1	61		1,5			89		Rimi et al. 1998
Morocco	MOR120	kj	-5,9250	33,9970				1	31		1,6			51		Rimi et al. 1998
Morocco	MOR121	sah1	-6,0000	34,0000				1	39		1,7			67		Rimi et al. 1998
Morocco	MOR122	ak 1-2-3	-5,6400	34,0100				3	33		1,6			53		Rimi et al. 1998
Morocco	MOR123	186/16	-1,9181	34,0169	1051	120	205		35		1,95			68	1	Rimi&Lucazeau1987
Morocco	MOR124	186/16	-1,9181	34,0169	1051	205	255		25		2,08			52	1	Rimi&Lucazeau1987
Morocco	MOR125	dj1	-5,9260	34,0180				1	38		1,6			59		Rimi et al. 1998
Morocco	MOR126	or4b	-5,6310	34,0240				1	32		1,7			55		Rimi et al. 1998
Morocco	MOR127	om101	-6,0230	34,0400				1	46		1,6			73		Rimi et al. 1998
Morocco	MOR128	mg1	-5,2100	34,0470				2	30		1,8			54		Rimi et al. 1998
Morocco	MOR129	to	-5,5990	34,0500				2	35		1,7			61		Rimi et al. 1998
Morocco	MOR130	my1	-5,1740	34,0750				1	40		1,9			74		Rimi et al. 1998
Morocco	MOR131	bt101	-6,0030	34,0770				1	43		1,6			69		Rimi et al. 1998
Morocco	MOR132	KA2/KA102	-5,2331	34,0800		1061	1061	1	26	4	2,5			64		Rimi1990
Morocco	MOR133	mh1	-5,8730	34,0880				1	27		2,0			55		Rimi et al. 1998
Morocco	MOR134	ob	-5,9690	34,0960				48	32		2,0			63		Rimi et al. 1998
Morocco	MOR135	kdh1	-3,5239	34,0989	527	1724	3489	4	32	18	2,5			79		Rimi et al. 1998
Morocco	MOR136	lr	-5,9480	34,1070				3	41		1,7			71		Rimi et al. 1998
Morocco	MOR137	ks3	-5,8860	34,1080				1	29		2,0			58		Rimi et al. 1998
Morocco	MOR138	nz6	-5,4140	34,1080				2	39		1,5			60		Rimi et al. 1998
Morocco	MOR139	df101	-5,9810	34,1150				1	46		1,7			76		Rimi et al. 1998
Morocco	MOR140	dz	-5,9400	34,1200				6	38		1,7			64		Rimi et al. 1998
Morocco	MOR141	mam1	-6,5290	34,1270				2	46		1,8			81		Rimi et al. 1998
Morocco	MOR142	nz13-14	-5,9230	34,1290				2	37		1,7			64		Rimi et al. 1998
Morocco	MOR143	nza2	-5,5170	34,1290				1	35		1,6			55		Rimi et al. 1998
Morocco	MOR144	kz	-5,9250	34,1300	156	1360	1392	2	25	4	2,5			62		Rimi et al. 1998
Morocco	MOR145	bk	-5,5500	34,1300				11	32		1,9			61		Rimi et al. 1998
Morocco	MOR146	nz3-4	-5,4610	34,1320				5	29		1,8			52		Rimi et al. 1998
Morocco	MOR147	sf	-5,9050	34,1340				15	35		1,9			65		Rimi et al. 1998
Morocco	MOR148	AH1/AZH1	-5,3850	34,1350		1289	2164	3	22	12	2,0			44		Rimi1990
Morocco	MOR149	li1	-5,8900	34,1360				1	33		1,7			56		Rimi et al. 1998
Morocco	MOR150	nza1a3	-5,8600	34,1360				3	33		1,5			51		Rimi et al. 1998
Morocco	MOR151	dm	-5,8900	34,1400				19	35		1,8			64		Rimi et al. 1998
Morocco	MOR152	kh	-5,8700	34,1500				47	36		1,7			62		Rimi et al. 1998
Morocco	MOR153	nzb1b2	-5,4450	34,1540				3	28		1,9			52		Rimi et al. 1998

Gomes et al. - Reappraisal of Heat Flow Variations in Mainland Africa.

Morocco	MOR154	MAM	-6,5681	34,1581	79	793	793	1	43	3	2,5			107		Rimi1990
Morocco	MOR155	or3	-5,8240	34,1680				10	30		2,2			67		Rimi et al. 1998
Morocco	MOR156	ot8	-5,7680	34,1680				3	44		1,8			77		Rimi et al. 1998
Morocco	MOR157	ZR3	-5,8439	34,1681		1688	2008	3	36	8	2,5			89		Rimi1990
Morocco	MOR158	zr	-5,8500	34,1700				18	39		1,8			69		Rimi et al. 1998
Morocco	MOR159	ZR2	-5,8381	34,1739		1822	1822	1	30	4	2,5			75		Rimi1990
Morocco	MOR160	sa1	-5,8200	34,1850				5	36		2,1			77		Rimi et al. 1998
Morocco	MOR161	km	-5,7350	34,1880				4	29		1,8			52		Rimi et al. 1998
Morocco	MOR162	gda1	-5,0500	34,1970				2	28		1,8			51		Rimi et al. 1998
Morocco	MOR163	or4-5-6-7	-5,8100	34,2040				12	31		2,1			64		Rimi et al. 1998
Morocco	MOR164	bd	-5,6800	34,2200				22	35		1,9			66		Rimi et al. 1998
Morocco	MOR165	mb1	-5,3400	34,2200				2	23		4,2			96		Rimi et al. 1998
Morocco	MOR166	tafrata1x	-3,1060	34,2200				1	35		2,2			76		Rimi et al. 1998
Morocco	MOR167	TFX/TAF-X	-3,1100	34,2219	530	2785	2785	1	37	14	2,5			92		Rimi1990
Morocco	MOR168	rm1	-4,5200	34,2240				4	33		2,0			65		Rimi et al. 1998
Morocco	MOR169	ba7	-5,6890	34,2260				3	35		2,0			69		Rimi et al. 1998
Morocco	MOR170	RM1/RM1	-4,5219	34,2269		994	3277	4	29	7	2,5			72		Rimi1990
Morocco	MOR171	sd1	-5,5800	34,2300				2	27		2,1			56		Rimi et al. 1998
Morocco	MOR172	ti102	-4,4310	34,2340				1	37		1,8			68		Rimi et al. 1998
Morocco	MOR173	or2-8	-5,7710	34,2360				6	30		2,4			71		Rimi et al. 1998
Morocco	MOR174	T12/TI102	-4,4331	34,2369		1103	1103	1	29	4	2,5			72		Rimi1990
Morocco	MOR175	MSD/MSD1	-3,4731	34,2481		1229	3608	4	37	16	2,6			96		Rimi1990
Morocco	MOR176	hs	-5,6550	34,2700				3	25		2,0			51		Rimi et al. 1998
Morocco	MOR177	grf1	-3,4240	34,2790				3	36		2,6			92		Rimi et al. 1998
Morocco	MOR178	ti101	-4,0880	34,2950				3	46		1,8			81		Rimi et al. 1998
Morocco	MOR179	T11/TI101	-4,9000	34,2969		519	939	3	36	2	2,5			90		Rimi1990
Morocco	MOR180	pkb	-5,7650	34,2980				8	22		3,7			81		Rimi et al. 1998
Morocco	MOR181	DG2/DRG2	-5,5650	34,2981		847	2169	2	28	9	2,5			69		Rimi1990
Morocco	MOR182	ka	-5,3400	34,3000				2	34		1,9			63		Rimi et al. 1998
Morocco	MOR183	A 7	-2,2269	34,3019		140	216		42		1,8			76	1	Rimi&Lucazeau1987
Morocco	MOR184	A 4	-2,2319	34,3069	1068	90	195		38		1,8			68	1	Rimi&Lucazeau1987
Morocco	MOR185	A 4	-2,2319	34,3069	1068	195	260		43		2,0			88	1	Rimi&Lucazeau1987
Morocco	MOR186	KA1/KA101	-5,3419	34,3081		1002	1058	2	27	4	2,5			67		Rimi1990
Morocco	MOR187	dgr	-5,5600	34,3100				6	28		2,4			66		Rimi et al. 1998
Morocco	MOR188	bb1	-5,3600	34,3100				3	25		2,1			52		Rimi et al. 1998

Morocco	MOR189	A 14	-2,2431	34,3119		170	350		43		2,08			89	1	Rimi&Lucazeau1987
Morocco	MOR190	dog1	-5,6900	34,3150		458	2497	4	32	4	1,7			55		Rimi et al. 1998
Morocco	MOR191	hr	-5,6100	34,3180				15	28		2,1			59		Rimi et al. 1998
Morocco	MOR192	DG3/DER3	-5,5600	34,3181		1173	2841	4	24	12	2,5			60		Rimi1990
Morocco	MOR193	bfs1	-4,3581	34,3250		1552	4266	4	34	9	2,1			72		Rimi et al. 1998
Morocco	MOR194	se	-6,4980	34,3260				4	34		1,9			63		Rimi et al. 1998
Morocco	MOR195	br1	-5,6140	34,3280				1	23		1,7			40		Rimi et al. 1998
Morocco	MOR196	sma1	-5,3669	34,3300		957	3463	5	23	14	2,4			56		Rimi et al. 1998
Morocco	MOR197	PR51/P5	-5,9000	34,3431	20	110	150		38		1,75			67	1	Rimi&Lucazeau1987
Morocco	MOR198	PR51/P5	-5,9000	34,3431	20	150	180		30		2,05			61	1	Rimi&Lucazeau1987
Morocco	MOR199	twila	-6,4569	34,3550		1885	1885	1	37	5	2,0			73		Rimi et al. 1998
Morocco	MOR200	hrn3	-5,6181	34,3681		1106	2715	3	28	5	2,0			57		Rimi et al. 1998
Morocco	MOR201	cgd	-6,0600	34,4200				10	28		1,9			52		Rimi et al. 1998
Morocco	MOR202	BN 30	-1,7981	34,4450	1050	80	120		28		4,07			114	1	Rimi&Lucazeau1987
Morocco	MOR203	ma101	-6,2181	34,4481		2961	3150	2	34	12	1,9			66		Rimi et al. 1998
Morocco	MOR204	BR 415/BR4	-1,8131	34,4519		30	120		34		3,0			102	1	Rimi&Lucazeau1987
Morocco	MOR205	BR 415/BR4	-1,8131	34,4519		30	120		34		1,8			61	1	Rimi&Lucazeau1987
Morocco	MOR206	B3W/ BN 38NW	-1,8100	34,4519	1053	20	100		43	1	2,4			105		Rimi1990
Morocco	MOR207	BS 38 N/B3N	-1,8100	34,4531		30	100		35		2,4			84	1	Rimi&Lucazeau1987
Morocco	MOR208	ak101	-3,6939	34,4650	718	1389	2155	2	29	10	2,1			61		Rimi et al. 1998
Morocco	MOR209	atm1	-3,8719	34,4808		1958	3448	3	38	1	2,1			81		Rimi et al. 1998
Morocco	MOR210	SH1/SAH1	-6,1100	34,4819		1500	1500	1	33	4	2,5			82		Rimi1990
Morocco	MOR211	nrt3	-5,8580	34,4900				1	31		1,6			50		Rimi et al. 1998
Morocco	MOR212	drj	-6,0940	34,4980				3	36		1,7			61		Rimi et al. 1998
Morocco	MOR213	onz2	-5,9669	34,5050		1000	1000	1	26	6	1,6			42		Rimi et al. 1998
Morocco	MOR214	okt	-6,0819	34,5119		1272	1272	1	33	3	1,6			54		Rimi et al. 1998
Morocco	MOR215	ksr	-5,9770	34,5200				3	27		1,8			49		Rimi et al. 1998
Morocco	MOR216	onz1	-5,9690	34,5230				2	28		1,7			47		Rimi et al. 1998
Morocco	MOR217	alg	-6,0600	34,5270				5	29		1,9			55		Rimi et al. 1998
Morocco	MOR218	onz3	-5,9790	34,5300				1	48		1,8			88		Rimi et al. 1998
Morocco	MOR219	nrt2	-5,8411	34,5300		1000	1300	2	28	8	1,8			51		Rimi et al. 1998
Morocco	MOR220	nrt5	-5,8731	34,5311	88	933	933	1	27	5	1,7			47		Rimi et al. 1998
Morocco	MOR221	nrt1	-5,9169	34,5331		1700	1700	1	29	3	1,8			53		Rimi et al. 1998
Morocco	MOR222	nrt4	-5,8769	34,5678		1528	1751	2	53	3	1,7			92		Rimi et al. 1998

Gomes et al. - Reappraisal of Heat Flow Variations in Mainland Africa.

Morocco	MOR223	oyf1	-6,0669	34,5850		492	1347	2	26	7	2,2			58		Rimi et al. 1998
Morocco	MOR224	dka	-6,0500	34,6440				1	47		1,8			84		Rimi et al. 1998
Morocco	MOR225	hal1	-6,0590	34,6550				1	42		1,5			65		Rimi et al. 1998
Morocco	MOR226	o1m	-6,1200	34,6600				3	33		1,9			63		Rimi et al. 1998
Morocco	MOR227	2952/12	-1,8250	34,6969	560	300	500		41		2,64			108	1	Rimi&Lucazeau1987
Morocco	MOR228	obd2	-6,1600	34,7100				3	32		1,8			59		Rimi et al. 1998
Morocco	MOR229	kba	-5,9500	34,7650				4	39		1,6			63		Rimi et al. 1998
Morocco	MOR230	isa1	-5,4550	34,7969		680	2135	3	21	10	2,3			48		Rimi et al. 1998
Morocco	MOR231	ans1	-6,1450	34,8619		501	1075	2	28	6	1,7			48		Rimi et al. 1998
Morocco	MOR232	PCD	-12,3433	27,7603	4	897	3904	6	31	7	2,5			78		Rimi1990
Mozambique	MOZ1	NY- 1	34,6500	-12,8667	153	320	1,7		47	4	0,7			33		1
Mozambique	MOZ2	NY- 2	34,5667	-12,3333	158	315	1,7		48	0	2,5			119		1
Mozambique	MOZ3	NY-18	34,5500	-12,2500	123	350	1,7		48	0	2,5			121	105?	1
Mozambique	MOZ4	NY-20	34,6000	-12,5833	123	350	1,7		11	0	2,5			28		1
Mozambique	MOZ5	NY-21	34,7167	-13,1000	178	295	1,7		13	0	2,5			32		1
Mozambique	MOZ6	V19-103	39,5000	-17,9000					19		2,5			47	1	66
Namibia	NAM1	Swartzkuppen	18,0833	-27,3500	1240	208	494		24	34	3,2	4	4,4	79	1	Ballard_etal1987
Namibia	NAM2	Rosh Pinah	16,7667	-27,9500	453	40	324		20	46	5,4			60	2	Ballard_etal1987
Namibia	NAM3	Skorpion	16,5333	-27,8000	650	60	567		18	43	3,1			55	1	Ballard_etal1987
Namibia	NAM4	Otjihase	17,1833	-22,4000	1965	156	348		27	31	2,2			58	1	Ballard_etal1987
Namibia	NAM5	Oamites	17,1000	-22,9667	1755	259	447		14	34	4	5	2,3	56	1	Ballard_etal1987
Namibia	NAM6	Gorob	15,3500	-23,5500	645	60	433		22	103	2,8	8	2	62	3	Ballard_etal1987
Namibia	NAM7	Valencia	15,2333	-22,3500	720	50	100		26	8	3,6	4	46,3	92	1	Ballard_etal1987
Namibia	NAM8	Otjua	16,4833	-20,8833	1445	96	201		22	16	3,4	4	5,2	75	1	Ballard_etal1987
Namibia	NAM9	Ondundu	15,4667	-20,7333	1010	60	150		17	10	4,1			69	1	Ballard_etal1987
Namibia	NAM10	Mitten Fold	15,0167	-20,6500	885	66	245		22	23	3,2			72	1	Ballard_etal1987
Namibia	NAM11	Goantagab	14,4500	-20,8000	650	179	273		29	10	2,4			69	1	Ballard_etal1987
Namibia	NAM12	Haib HB 77	17,8833	-28,6950	501	220	540	17	19	23	3,43	4	2,05	64	1	Jones1987
Niger	NIG1	Donkolo	0,9167	14,8833	260	60	245	19	8	15	2,32	1	1,8	18	1	Chapman&Pollack1974
Niger	NIG2	Kourki K15	0,3333	14,4167	250	160	358	11	5	16	3,98	2	1,03	21		Chapman&Pollack1974
Niger	NIG3	Kourki K6B	0,3333	14,4167	250	180	406	13	6	17	3,78	2	1,25	22		Chapman&Pollack1974
Niger	NIG4	NGELE	12,1850	14,2067	330	400	2780	5	13		3			39		Lesquer_unpub
Niger	NIG5	KORKIK1	0,3333	14,4167		160	358	9	6		3,6			20		Lesquer_unpub
Niger	NIG6	YOGOU1	13,7333	14,7833		2550	4000	5	45		1,8			81		Lesquer_unpub
Niger	NIG7	MOUL1	13,3200	15,0883	355	1160	3400	3	30		2			60		Lesquer_unpub

Niger	NIG8	OILIALA	11,9050	15,7583	377	1040	1980	2	54		2			108		Lesquer_unpub
Niger	NIG9	DONGA1	12,2233	15,7600	366	740	3200	3	34		1,8			61		Lesquer_unpub
Niger	NIG10	TRAKES	13,4083	15,8900	364	2260	3660	4	41		1,8			74		Lesquer_unpub
Niger	NIG11	IAGUIL	11,9733	16,0767	8	950	2480	2	60		2			120		Lesquer_unpub
Niger	NIG12	MADAMA	12,6417	16,5433	400	800	3660	4	27		1,8			49		Lesquer_unpub
Niger	NIG13	ANOUAR	7,7500	17,2500	500	20	195	36	14		4,3			61		Lesquer_unpub
Niger	NIG14	PNC 143	7,7167	17,6667	510	50	190	15	20		3,4			67	1	Lesquer_etal1989
Niger	NIG15	PNC G 132	7,7333	17,6833	510	50	100	10	14		4,3			60	1	Lesquer_etal1989
Niger	NIG16	Anu Araren TA CAMP 1	7,6108	17,7523	500	20	195		14		4,3			61	1	Lesquer_etal1989
Niger	NIG17	PNC 138	7,7333	17,8000	510	70	170	10	21		3,4			71	1	Lesquer_etal1989
Niger	NIG18	PNC139	7,7667	17,8000					23		2,5			58		Lesquer_unpub
Niger	NIG19	FACHI1	10,9533	18,0250	418	460	3740	7	42		1,8			76		Lesquer_unpub
Niger	NIG20	AR3082	7,2667	18,6167					14		2,5			35		Lesquer_unpub
Niger	NIG21	AR3083	7,3000	18,6167					20		2,5			50		Lesquer_unpub
Niger	NIG22	Somair 2079	7,2500	18,6333	430	70	95		10		4,5			45	1	Lesquer_etal1988
Niger	NIG23	Somair 2079	7,2500	18,6333	430	95	200		24		2,8			68	1	Lesquer_etal1988
Niger	NIG24	Arli 536	7,3000	18,6667	430	117	171	9	14		4,5			63	1	Lesquer_etal1988
Niger	NIG25	Arli 536	7,3000	18,6667	430	171	335	15	48		1,4			68	1	Lesquer_etal1988
Niger	NIG26	Arli 536	7,3000	18,6667	430	335	460	16	14		4,6			65	1	Lesquer_etal1988
Niger	NIG27	Arli 348bis	7,2667	18,7000	430	100	160	13	14		4,3			61	1	Lesquer_etal1988
Niger	NIG28	Mala 544ter	7,5500	18,7000	435	30	55	5	12		4,5			54	1	Lesquer_etal1988
Niger	NIG29	Mala 544ter	7,5500	18,7000	435	55	195	12	48		1,4			67	1	Lesquer_etal1988
Niger	NIG30	Omalbaza	5,5000	13,9333	300	50	460	42	26		2,8			73	1	Lesquer_etal1989
Nigeria	NIR1	L17 L18	8,7500	10,7500		70	160	2	26	17	1,49	5	2,64	38	1	Verheijen& Ajakaiye1979
Nigeria	NIR2	NPE-9	7,4989	3,9067					25		2,3			57	1	Chukwueke_etal 1992
Nigeria	NIR3	NPE-8	7,4409	3,9212					25		2,1			53	1	Chukwueke_etal 1992
Nigeria	NIR4	NPE-6	7,6669	3,9248					25		2,1			53	1	Chukwueke_etal 1992
Nigeria	NIR5	NPE-3	8,0519	3,9718					25		2,7			67	1	Chukwueke_etal 1992
Nigeria	NIR6	NPE-7	7,4409	4,0080					25		2,4			61	1	Chukwueke_etal 1992
Nigeria	NIR7	NPE-5	7,7800	4,0442					25		2,0			50	1	Chukwueke_etal 1992
Nigeria	NIR8	NPE-2	7,9052	4,1165					25		2,4			61	1	Chukwueke_etal 1992
Nigeria	NIR9	NPE-1	7,5600	4,2250					25		2,2			54	1	Chukwueke_etal 1992
Nigeria	NIR10	GUE-4	7,0742	4,2829					20		2,7			53	1	Chukwueke_etal

															1992
Nigeria	NIR11	OML-29	6,4051	4,4529					20	2,4			48	1	Chukwueke_etal 1992
Nigeria	NIR12	OML-11	7,5478	4,5324					20	3,2			64	1	Chukwueke_etal 1992
Nigeria	NIR13	OML-18	7,0620	4,5614					20	3,0			60	1	Chukwueke_etal 1992
Nigeria	NIR14	GUE-5	7,2789	4,6771					20	3,2			64	1	Chukwueke_etal1 992
Nigeria	NIR15	GUE-1	6,3960	4,8543					20	2,3			45	1	Chukwueke_etal1 992
Nigeria	NIR16	NH	5,4366	4,8977					20	2,6			51	1	Chukwueke_etal1 992
Nigeria	NIR17	OML-28	6,4265	4,9520					20	2,9			57	1	Chukwueke_etal1 992
Nigeria	NIR18	GUW-5	4,9447	5,2666					27	2,4			64	1	Chukwueke_etal 1992
Nigeria	NIR19	NG	5,2105	5,3426					27	2,5			67	1	Chukwueke_etal 1992
Nigeria	NIR20	NF	5,0822	5,3751					27	2,9			77	1	Chukwueke_etal 1992
Nigeria	NIR21	GUW-4	4,9081	5,4041					27	2,3			61	1	Chukwueke_etal 1992
Nigeria	NIR22	OML-30	5,9193	5,5090					20	2,3			45	1	Chukwueke_etal 1992
Nigeria	NIR23	GUW-3	4,7400	5,5343					32	1,9			60	1	Chukwueke_etal 1992
Nigeria	NIR24	NE	5,0486	5,5524					27	2,5			67	1	Chukwueke_etal 1992
Nigeria	NIR25	GUW-7	4,8500	5,5994					32	2,0			64	1	Chukwueke_etal 1992
Nigeria	NIR26	ND	4,9508	5,6934					32	1,9			61	1	Chukwueke_etal 1992
Nigeria	NIR27	JATUMI2	5,5333	5,7500			3300	2	23	2,5			57		Chukwueke 1987
Nigeria	NIR28	NC	4,9967	5,7911					32	2,5			64	1	Chukwueke_etal 1992
Nigeria	NIR29	NB	4,8928	5,8634					32	2,5			60	1	Chukwueke_etal 1992
Nigeria	NIR30	NPW-1	5,3236	5,8743					20	2,5			52	1	Chukwueke_etal 1992
Nigeria	NIR31	GUW-2	4,4620	5,9828					32	2,5			85	1	Chukwueke_etal 1992
Nigeria	NIR32	NA	4,8195	6,0189					32	2,5			76	1	Chukwueke_etal 1992
Nigeria	NIR33	NPW-2	5,5772	6,0406					20	2,5			49	1	Chukwueke_etal 1992
Nigeria	NIR34	NPW-3	5,5252	6,0876					20	2,3			45	1	Chukwueke_etal 1992
Nigeria	NIR35	GUW-1	4,3673	6,1094					32	2,5			79	1	Chukwueke_etal 1992

Nigeria	NIR36	AK-1	7,1963	6,2541					13		2,5			33	1	Onuoha& Ekine1999
Nigeria	NIR37	IGB-1	7,0052	6,3080					10		2,5			26	1	Onuoha& Ekine1999
Nigeria	NIR38	AJR-1	6,8111	6,3234					15		1,86			27	1	Onuoha& Ekine1999
Nigeria	NIR39	JI-1	6,6878	6,3695					21		1,95			41	1	Onuoha& Ekine1999
Nigeria	NIR40	LO-1	7,0196	6,4404					17		1,79			30	1	Onuoha& Ekine1999
Nigeria	NIR41	NZ-1	6,7536	6,4465					63		0,5			34	1	Onuoha& Ekine1999
Nigeria	NIR42	OKP-1	6,7731	6,4635					62		0,5			33	1	Onuoha& Ekine1999
Nigeria	NIR43	AM-2	7,3083	6,4696					42		0,6			25	1	Onuoha& Ekine1999
Nigeria	NIR44	ODR-1	6,7566	6,5913					57		0,5			31	1	Onuoha& Ekine1999
Nigeria	NIR45	ANR-3	6,8881	6,6298					50		0,6			28	1	Onuoha& Ekine1999
Nigeria	NIR46	ANAMBRA2	6,8667	6,6333			2175	3	23		2,5			57		Chukwueke1987
Nigeria	NIR47	ANR-2	6,8799	6,6667					60		1,83			35	1	Onuoha& Ekine1999
Nigeria	NIR48	ANAMBRA3	6,8500	6,6833			2427	2	28		2,5			70		Chukwueke1987
Nigeria	NIR49	ANR-1	6,8717	6,6913					49		0,6			28	1	Onuoha& Ekine1999
Nigeria	NIR50	IH-1	7,5590	6,8053					57		0,7			38	1	Onuoha& Ekine1999
Nigeria	NIR51	AD	6,5265	6,8161					60		0,6			37	1	Onuoha& Ekine1999
Nigeria	NIR52	AID	7,6750	6,8453					54		0,6			35	1	Onuoha& Ekine1999
Nigeria	NIR53	ALD-1	6,8327	7,0116					50		0,5			25	1	Onuoha& Ekine1999
Nigeria	NIR54	L22	8,7717	10,6983		110	250		17	6	3,11			53	1	Chukwueke1990
Nigeria	NIR55	L18	8,7167	10,7167		110	250		17	6	3,26			54	1	Chukwueke1990
Nigeria	NIR56	L20	8,6950	10,7250		110	250		15	4	3,03			46	1	Chukwueke1990
Rwanda	RWA1	KIVU-13	29,1692	-1,8025		468	5	3	40		0,62	W2	5,8	25		1
Senegal	SEN1	CASM2	-17,0667	12,4667			3786	8	25		2,5			62		Latil-Brun& Lucazeau1988
Senegal	SEN2	CASM1	-17,0000	12,8000			4110	8	24		2,5			61		Latil-Brun& Lucazeau1988
Senegal	SEN3	KARTIAK	-16,5000	12,8667			1800	3	21		2,5			53		Latil-Brun& Lucazeau1988
Senegal	SEN4	CASM4	-17,3500	12,9000			4230	8	23		2,5			57		Latil-Brun& Lucazeau1988
Senegal	SEN5	KAFOUNT	-16,7517	12,9017	4		5395	5	27		2,5			65		Latil-Brun& Lucazeau1988
Senegal	SEN6	TAMIN	-13,7500	13,3333					13		2,5			32		Latil-Brun&

															Lucazeau1988
Senegal	SEN7	NEMADING	-16,4333	13,7333			1801	3	28		2,5			69	Latil-Brun& Lucazeau1988
Senegal	SEN8	KEUR	-14,9500	13,8333					14		2,5			34	Latil-Brun& Lucazeau1988
Senegal	SEN9	DIAM	-14,6333	13,8333					14		2,5			34	Latil-Brun& Lucazeau1988
Senegal	SEN10	DJIFFERE	-16,7833	13,9167			1826	4	24		2,5			60	Latil-Brun& Lucazeau1988
Senegal	SEN11	MBOUR1	-16,9667	14,4167			3644	9	26		2,5			66	Latil-Brun& Lucazeau1988
Senegal	SEN12	330	-17,0333	14,4833	15				21		2,5			52	Lucazeau_etal 1991
Senegal	SEN13	603A	-17,0850	14,5217					21		2,5			52	Lucazeau_etal 1991
Senegal	SEN14	602	-17,0667	14,5333					17		2,5			42	Lucazeau_etal 1991
Senegal	SEN15	626C	-17,2667	14,5667		500	150		20		2,5			49	Lucazeau_etal 1991
Senegal	SEN16	POUT2	-16,9167	14,5833			2102	4	22		2,5			56	Latil-Brun& Lucazeau1988
Senegal	SEN17	DIORBEL	-16,1833	14,6000			4130	8	27		2,5			67	Latil-Brun& Lucazeau1988
Senegal	SEN18	KOLOBANE	-15,8333	14,6000			2560	3	29		2,5			72	Latil-Brun& Lucazeau1988
Senegal	SEN19	307	-17,0183	14,6017	20				17		2,5			42	Lucazeau_etal 1991
Senegal	SEN20	208	-16,8667	14,6067	29				24		2,5			59	Lucazeau_etal 1991
Senegal	SEN21	PZ10.6	-17,1533	14,6167					19		2,5			47	Lucazeau_etal 1991
Senegal	SEN22	NDIASS	-17,0833	14,6333			3995	7	29		2,5			73	Latil-Brun& Lucazeau1988
Senegal	SEN23	BARGNY	-17,1900	14,6917	12	940	2470	3	38		2			76	Latil-Brun& Lucazeau1988
Senegal	SEN24	TAMNA	-17,3333	14,7333			2113	4	21		2,5			52	Latil-Brun& Lucazeau1988
Senegal	SEN25	DIAM2	-17,2167	14,7333			2650	7	22		2,5			56	Latil-Brun& Lucazeau1988
Senegal	SEN26	DIAM3	-17,2167	14,7333			1432	4	24		2,5			61	Latil-Brun& Lucazeau1988
Senegal	SEN27	DIAM4	-17,2167	14,7333			1623	6	22		2,5			55	Latil-Brun& Lucazeau1988
Senegal	SEN28	DIAM5	-17,2167	14,7333			2150	5	18		2,5			45	Latil-Brun& Lucazeau1988
Senegal	SEN29	TIENABA	-16,7667	14,7333			3403	9	23		2,5			57	Latil-Brun& Lucazeau1988
Senegal	SEN30	215	-16,7917	14,7667	38				28		2,5			70	Lucazeau_etal 1991
Senegal	SEN31	RETBA1	-17,2333	14,8000			2200	4	23		2,5			57	Latil-Brun& Lucazeau1988

Senegal	SEN32	BAMBILOR	-17,0833	14,8333			2069	5	20		2,5			51		Latil-Brun& Lucazeau1988
Senegal	SEN33	CAYAR1	-17,1333	14,9167			2051	3	18		2,5			44		Latil-Brun& Lucazeau1988
Senegal	SEN34	MTROLL	-16,9500	14,9667			3500	7	23		2,5			57		Latil-Brun& Lucazeau1988
Senegal	SEN35	299B.P8	-17,0400	14,9917	22				22		2,5			55		Lucazeau_etal 1991
Senegal	SEN36	PZ679	-16,9033	15,0233					22		2,5			56		Lucazeau_etal 1991
Senegal	SEN37	230	-16,4700	15,5367	44				14		2,5			36		Lucazeau_etal 1991
Senegal	SEN38	TOUNDOU	-16,3333	16,1667			4000	6	25		2,5			62		Latil-Brun& Lucazeau1988
Sierra Leone	SIL1	KOIDU	-11,0000	8,5833					10		2,5			26		Sass& Behrendt1980
Somalia	SOM1	EL HAMMO	48,8333	6,8000					26		2,5			64	1	Evans1976
Somalia	SOM2	DUSA MAR	45,8333	5,5833					18		2,5			44	1	Evans1976
Somalia	SOM3	GIRA-1	48,1167	5,5000					15		2,5			37		1
Somalia	SOM4	HOL-1	41,9500	3,4333					26		2,5			65		1
Somalia	SOM5	DUDDUMAI	44,9000	2,5333					23		2,5			58		1
Somalia	SOM6	MERCA-1	44,9333	1,8667					34		2,5			86		1
Somalia	SOM7	CORIOLE1	44,5500	1,8333					25		2,5			62		1
Somalia	SOM8	CORIOLE2	44,6000	1,8167					28		2,5			70		1
Somalia	SOM9	DOBEI-2	44,4667	1,7167					24		2,5			60		1
Somalia	SOM10	BRAVA-1	43,7167	0,9833					24		2,5			60		1
Somalia	SOM11	LACH BIS	41,3167	0,8167					28		2,5			70		1
Somalia	SOM12	LACH DER	41,5333	0,4833					30		2,5			75		1
Somalia	SOM13	GIAMAMA1	42,8000	0,0833					22		2,5			56		1
Somalia	SOM14	ODDO ALI	42,4000	0,0667					26		2,5			64		1
Somalia	SOM15	MARIA AS	47,4333	4,5167					28		2,5			69		1
Somalia	SOM16	BULO BUR	45,5000	4,0667					18		2,5			44		1
Somalia	SOM17	GAL TARD	45,7500	3,0833					23		2,5			58		1
Somalia	SOM18	BIA ADDO	45,8667	2,9500					27		2,5			67		1
Somalia	SOM19	UARSCIEK	45,4500	2,2167					32		2,5			80		1
Somalia	SOM20	AFGOI-1	45,0500	2,1167					26		2,5			66		1
Somalia	SOM21	COTTON	50,5167	9,5500		400	3300	4	20	23	3,0	0		59		2
Somalia	SOM22	DARIN	49,7500	10,6667		400	3000	4	25	18	2,4	0		59		2
Somalia	SOM23	SAGLEH	50,6667	9,4167		400	3250	6	24	10	2,5	0		59		2
Somalia	SOM24	HORDIO	51,0000	10,6167		400	3400	5	22	32	2,5	0		54		2
South Africa	SOU1	Nababeep Flat Mine FM 143	17,6933	-29,5317	758	360	799	23	20	41	3,14	22	8	61	1	Jones1987

South Africa	SOU2	Nababeep Flat Mine FM 143	17,6933	-29,5317	757	0	1520		19	49	3,18	22	8	60	1	Carte & vanRooyen 1969
South Africa	SOU3	Hoogkraal East HKE 26	17,9083	-29,5333	922	162	467	34	20	32	3,82	20	12,3	76	1	Jones 1987
South Africa	SOU4	Homeep East HE 177	18,0100	-29,5367	1059	213	472	15	19	27	3,49	19	6,9	65	1	Jones 1987
South Africa	SOU5	Carolusberg West CCX-042S	17,9667	-29,6400	974	198	589	21	19	32	3,11	22	3,6	60	1	Jones 1987
South Africa	SOU6	Aggeneys AG 140	18,7450	-29,2200	883	200	440	13	19	19	2,94	17	2,8	55	1	Jones 1987
South Africa	SOU7	Aggeneys AG 140	18,7450	-29,2200	883	600	670	8	12	8	4,89	17	2,8	57		Jones 1987
South Africa	SOU8	Puts-berg POG 32	19,6417	-29,3417	1030	199	345	8	17	21	4,31	4	2,05	74	1	Jones 1987
South Africa	SOU9	Puts-berg POG 32	19,6417	-29,3417	1030	345	512	9	17	20	6	4	2,05	104		Jones 1987
South Africa	SOU10	Adjoining Geelvoer G-42	20,1183	-29,3250	915	45	137	19	18	18	3,4	15	1	60	1	Jones 1987
South Africa	SOU11	Rozyne Bosch RB 56	20,7900	-29,0617	742	139	188	6	22	10	3,11	5	3,8	69	1	Jones 1987
South Africa	SOU12	Rozyne Bosch RB 56	20,7900	-29,0617	742	284	351	8	21	10	3,85			80		Jones 1987
South Africa	SOU13	Rozyne Bosch RB 56	20,7900	-29,0617	742	360	434	9	22	10	3,89			85		Jones 1987
South Africa	SOU14	Areachap AP 11	21,0417	-28,2850	920	159	462	18	20	39	2,62	26	3	52	1	Jones 1987
South Africa	SOU15	Boks-Puts KC 12	21,6533	-29,0183	1008	116	210	7	14	26	2,88	19	1,1	39	1	Jones 1987
South Africa	SOU16	Jacomyns Pan PC2-27	21,7867	-29,3267	1045	189	445	18	17	30	3,55	12	2,2	60	1	Jones 1987
South Africa	SOU17	Vogelstruis Bult V41	22,3000	-29,9617	1073	247	402	17	14	18	3,2	5	0,8	46	1	Jones 1987
South Africa	SOU18	Vogelstruis Bult V41	22,3000	-29,9617	1073	402	449	6	14	5	2,52	5	0,8	34		Jones 1987
South Africa	SOU19	Vogelstruis Bult V41	22,3000	-29,9617	1073	531	703	24	18	29	2,7	5	0,8	49		Jones 1987
South Africa	SOU20	Vogelstruis Bult V41	22,3000	-29,9617	1073	703	731	5	17	7	2,28	5	0,8	39		Jones 1987
South Africa	SOU21	Rhenosterhoek DRH18	26,4500	-26,8383	1470	159	510	38	10	44	3,52	3	1,9	34	1	Jones 1988
South Africa	SOU22	Rhenosterberghoek DRB6	26,4600	-26,8300	1425	160	400	25	9	32	3,5	3	2,1	31	1	Jones 1988
South Africa	SOU23	Rieitkuil DRL17	26,4933	-26,8100	1385	100	230	14	10	16	3,37	3	1,3	33	1	Jones 1988
South Africa	SOU24	Schoemansfontein BSF1	26,5383	-26,7483	1380	200	714	53	11	60	3,16	3	3,4	36	1	Jones 1988
South Africa	SOU25	Brakspruit BBS1	26,5617	-26,7000	1345	60	250	20	10	19	3,29	2	2,5	33	1	Jones 1988
South Africa	SOU26	Brakspruit BBS1	26,5617	-26,7000	1345	260	300	5	11	4	3,6	2	2,5	39	1	Jones 1988
South Africa	SOU27	Mahemsvlei BMV4	26,6233	-26,6050	1360	170	579	42	11	49	3,14	2	1,5	33	1	Jones 1988
South Africa	SOU28	Tweelingfontein BTF1	26,8617	-26,4517	1480	200	450	26	10	32	3,21	3	3	33	1	Jones 1988
South Africa	SOU29	Goedehoop GH1	29,1883	-26,5217	1610	107	2100	5	18		2,5			44	1	Jones 1988
South Africa	SOU30	Driefontein DF1	29,1433	-26,4917	1636	241	1402	3	19		2,5			47	1	Jones 1988
South Africa	SOU31	Driefontein DF2	29,1600	-26,4917	1616	235	1784	3	19		2,5			48	1	Jones 1988
South Africa	SOU32	Driefontein DF3	29,1467	-26,4783	1650	495	1968	4	20		2,5			51	1	Jones 1988
South Africa	SOU33	Winkelhaak WH1	29,1133	-26,4933	1590	185	1490	5	21		2,5			53	1	Jones 1988
South Africa	SOU34	Winkelhaak WH2	29,1133	-26,4650	1632	613	1506	3	21		2,5			52	1	Jones 1988
South Africa	SOU35	Winkelhaak WH3	29,0917	-26,4567	1594	226	1516	4	24		2,5			59	1	Jones 1988
South Africa	SOU36	Winkelhaak WH4	29,1150	-26,4317	1632	354	2211	4	21		2,5			53	1	Jones 1988
South Africa	SOU37	Winkelhaak WH5	29,0750	-26,4600	1605	599	1214	3	24		2,5			61	1	Jones 1988

Gomes et al. - Reappraisal of Heat Flow Variations in Mainland Africa.

South Africa	SOU38	Winkelhaak WH6	29,1100	-26,4550	1630	392	1812	5	25		2,5			63	1	Jones1988
South Africa	SOU39	Leeuwspruit LS1	29,0783	-26,4733	1583	171	1263	4	22		2,5			55	1	Jones1988
South Africa	SOU40	Grootlaagte GL1	28,9783	-26,3950	1610	1068	2196	3	24		2,5			60	1	Jones1988
South Africa	SOU41	Reitfontein RF1	28,8983	-26,3700	1664	361	1134	4	21		2,5			52	1	Jones1988
South Africa	SOU42	Zuurbult ZA	27,7667	-26,2500	1620	151	991	8	7		6,3			44	1	Jones1988
South Africa	SOU43	Doornkop D2	27,8167	-26,2333	1610	31	608	5	11		3,3			36	1	Jones1988
South Africa	SOU44	Vlakfontein V1	27,8167	-26,2000	1650	141	1028	8	8		6,0			48	1	Jones1988
South Africa	SOU45	GM7	27,6700	-26,3000	1577	485	684	21	8	26	6,42			51	1	Jones1988
South Africa	SOU46	Gerhardminnebron GMB2	27,1950	-26,4717	1545	1125	2142	11	18		2,5			44	1	Jones1988
South Africa	SOU47	Oude Dorp OD1	27,0550	-26,5783	1405	938	2022	13	22		2,5			55	1	Jones1988
South Africa	SOU48	Welgedund WE1	26,9833	-26,5667	1450	1672	2118	10	20		2,5			50	1	Jones1988
South Africa	SOU49	Stilfontein ST7	26,8433	-26,7717	1355	244	658	8	12		5,1			61	1	Jones1988
South Africa	SOU50	Stilfontein ST11	26,8300	-26,7767	1349	183	1067	16	18		2,5			46	1	Jones1988
South Africa	SOU51	Stilfontein ST14	26,8317	-26,8000	1349	488	1614	20	22		2,5			56	1	Jones1988
South Africa	SOU52	Stilfontein ST9	26,8033	-26,8217	1341	244	942	13	19		2,5			48	1	Jones1988
South Africa	SOU53	Hartebeesfontein UC47	26,8517	-26,8367	1326	853	1036	4	9		6,4			58	1	Jones1988
South Africa	SOU54	Hartebeesfontein HB3	26,7967	-26,8417	1338	427	1097	12	22		2,5			54	1	Jones1988
South Africa	SOU55	Hartebeesfontein HB2	26,8150	-26,8550	1327	427	1730	20	22		2,5			56	1	Jones1988
South Africa	SOU56	Hartebeesfontein HB10	26,8317	-26,8683	1313	610	1524	14	10		5,9			59	1	Jones1988
South Africa	SOU57	Hartebeesfontein HB5	26,8133	-26,8800	1308	549	1029	10	12		6			72	1	Jones1988
South Africa	SOU58	Hartebeesfontein HB9	26,8167	-26,8917	1301	549	1128	11	11		6			66	1	Jones1988
South Africa	SOU59	Hartebeesfontein HB14	26,7967	-26,8917	1317	914	1585	12	21		2,5			52	1	Jones1988
South Africa	SOU60	Hartebeesfontein HB16	26,7983	-26,9067	1314	549	1463	16	24		2,5			60	1	Jones1988
South Africa	SOU61	Hartebeesfontein HB11	26,8283	-26,9083	1305	1585	2073	9	8		6,1			49	1	Jones1988
South Africa	SOU62	Hartebeesfontein HB8	26,8133	-26,9100	1295	732	1463	13	21		2,5			53	1	Jones1988
South Africa	SOU63	Buffelsfontein BU3	26,8200	-26,9233	1298	1158	2012	15	20		2,5			50	1	Jones1988
South Africa	SOU64	Buffelsfontein BU1	26,8133	-26,9367	1292	1097	2286	19	20		2,5			50	1	Jones1988
South Africa	SOU65	Doornkom West DW1	26,7833	-26,9667	1310	0	1951	1	22		2,5			54	1	Jones1988
South Africa	SOU66	Wowehuis WS1	26,5733	-27,0933	1290	610	2377	24	21		2,5			52	1	Jones1988
South Africa	SOU67	Vergenoeg VG1	26,9300	-27,3933	1360	0	2438	1	22		2,5			55	1	Jones1988
South Africa	SOU68	Klein Brittanje SB1	26,5533	-27,6600	1290	243	997	9	19		2,5			48	1	Jones1988
South Africa	SOU69	Goud Kwartz SB2	26,4783	-27,7100	1327	137	1261	10	19		2,5			48	1	Jones1988
South Africa	SOU70	Rendezvous RS1	26,6433	-27,7133	1301	0	1879	1	21		2,5			53	1	Jones1988
South Africa	SOU71	S1	26,6117	-27,7150	1305	150	400	20	15	33	3,45			50	1	Jones1988
South Africa	SOU72	S1	26,6117	-27,7150	1305	840	1100	20	15	33	3,45			50	1	Jones1988
South Africa	SOU73	Diamant DT1	26,6167	-27,7817	1305	0	2469	1	20		2,5			50	1	Jones1988
South Africa	SOU74	Weltevreden WN5	26,6333	-27,8050	1310	0	2073	1	21		2,5			53	1	Jones1988

Gomes et al. - Reappraisal of Heat Flow Variations in Mainland Africa.

South Africa	SOU75	Spes Bona TV2	26,6333	-27,8117	1310	732	1768	18	21		2,5			52	1	Jones1988
South Africa	SOU76	Van den Heeversrus VDH4A	26,6450	-27,8367	1315	0	1798	1	21		2,5			52	1	Jones1988
South Africa	SOU77	Rosedale RD1	26,6467	-27,8467	1320	0	1768	1	20		2,5			49	1	Jones1988
South Africa	SOU78	Mooiteokmost M2	26,7350	-27,9517	1380	0	1372	1	20		2,5			50	1	Jones1988
South Africa	SOU79	Mieliebult MB3	26,7667	-27,9517	1380	284	1067	5	19		2,5			47	1	Jones1988
South Africa	SOU80	St. Helena SH1	26,6950	-28,0300	1320	302	2134	16	10		5,9			59	1	Jones1988
South Africa	SOU81	La Riviera LR7	26,8783	-28,0333	1380	0	1646	1	18		2,5			44	1	Jones1988
South Africa	SOU82	Portland PW1	27,0000	-28,0000	1360	0	1006	1	18		2,5			45	1	Jones1988
South Africa	SOU83	Brooklands BOS1	27,0000	-28,0333	1360	0	1036	1	20		2,5			51	1	Jones1988
South Africa	SOU84	Jurgens Hof JH1	26,8017	-28,0650	1333	0	2151	1	18		2,5			45	1	Jones1988
South Africa	SOU85	Jurgens Hof JH2	26,7950	-28,0600	1333	0	1671	1	18		2,5			44	1	Jones1988
South Africa	SOU86	Blaaudrift BD1	26,7200	-28,1067	1310	0	700	1	24		2,5			60	1	Jones1988
South Africa	SOU87	Blaaudrift BD2	26,7233	-28,1067	1319	0	560	1	20		2,5			49	1	Jones1988
South Africa	SOU88	Blaaudrift BD3	26,7267	-28,1133	1294	0	360	1	21		2,5			53	1	Jones1988
South Africa	SOU89	Blaaudrift BD4	26,7283	-28,1100	1297	0	2139	1	24		2,5			60	1	Jones1988
South Africa	SOU90	Kalkoenkranz KK1	26,7283	-28,1600	1330	0	552	1	20		2,5			51	1	Jones1988
South Africa	SOU91	Palmietkuil PK1	26,7067	-28,1833	1340	0	1348	1	20		2,5			51	1	Jones1988
South Africa	SOU92	Palmietkuil PK2	26,7083	-28,2117	1360	0	2244	1	21		2,5			52	1	Jones1988
South Africa	SOU93	Palmietkuil PK3	26,7217	-28,2083	1345	0	2310	1	23		2,5			57	1	Jones1988
South Africa	SOU94	Palmietkuil PK4	26,7433	-28,2083	1348	0	2750	1	18		2,5			46	1	Jones1988
South Africa	SOU95	Boschuis Spruit BLS1	26,7050	-28,2483	1371	0	1120	1	20		2,5			51	1	Jones1988
South Africa	SOU96	Excelsior EX1	26,7317	-28,2600	1370	0	376	1	22		2,5			55	1	Jones1988
South Africa	SOU97	Mooivlakte MV1	26,7700	-28,2400	1375	0	1049	1	22		2,5			56	1	Jones1988
South Africa	SOU98	Doorndeel DD1	26,8050	-28,2467	1365	0	1068	1	20		2,5			50	1	Jones1988
South Africa	SOU99	Leeuwbult LB1	26,7650	-28,2600	1385	0	945	1	22		2,5			55	1	Jones1988
South Africa	SOU100	Leeuwbult LB2	26,7667	-28,2833	1405	0	851	1	21		2,5			53	1	Jones1988
South Africa	SOU101	Avondrust AR1	26,7017	-28,2817	1385	0	760	1	16		2,5			41	1	Jones1988
South Africa	SOU102	Avondrust AR2	26,7117	-28,2800	1383	0	780	1	19		2,5			48	1	Jones1988
South Africa	SOU103	Jacoba 3	26,5700	-27,1500	1310	48	389		12	4	3,35			41	1	Bullard1939
South Africa	SOU104	Jacoba 3	26,5700	-27,1500	1310	389	846		12	5	3,35			41	1	Bullard1939
South Africa	SOU105	Jacoba 3	26,5700	-27,1500	1310	846	1564		13	5	2,89			38	1	Bullard1939
South Africa	SOU106	Jacoba 3	26,5700	-27,1500	1310	1564	2143		15	5	2,89			43	1	Bullard1939
South Africa	SOU107	Gerhardminnebron	27,2150	-26,4850	1520	1276	2846	12	9	21	5,69			54	1	Bullard1939
South Africa	SOU108	Doornkloof	27,5733	-26,3917	1665	30	1223	11	6		4,6			29	1	Bullard1939
South Africa	SOU109	Doornkloof	27,5733	-26,3917	1665	1223	1893	10	9		5,65			50	1	Bullard1939
South Africa	SOU110	Reef-Nigel	28,3000	-26,2833	1565	91	427	12	14		3,1			43	1	Bullard1939
South Africa	SOU111	Reef-Nigel	28,3000	-26,2833	1565	427	930	18	8		5,6			45	1	Bullard1939

Gomes et al. - Reappraisal of Heat Flow Variations in Mainland Africa.

South Africa	SOU112	Reef-Nigel	28,3000	-26,2833	1565	930	1387	18	9		4,6			41	1	Bullard1939
South Africa	SOU113	Hartebeesfontein HB15	26,7867	-26,8767	1325				9	11	5,36			48	1	Carte1954
South Africa	SOU114	Hartebeesfontein HB15	26,7867	-26,8767	1325				14	11	2,97			42	1	Carte1954
South Africa	SOU115	Hartebeesfontein HB15	26,7867	-26,8767	1325				11	8	5,52			62	1	Carte1954
South Africa	SOU116	Roodeport Borehole 1	26,6200	-26,9100	1325		398		12	15	3,01			33	1	Carte1954
South Africa	SOU117	Roodeport Borehole 1	26,6200	-26,9100	1325		1388		15		2,5			38	1	Carte1954
South Africa	SOU118	Messina 0-32	30,1000	-22,3000	520	102	149		22	4	2,74			59	1	Carte1954
South Africa	SOU119	Messina 0-32	30,1000	-22,3000	520	155	234		27	2	2,13			57	1	Carte1954
South Africa	SOU120	Kestell 7	28,7000	-28,3000	1980		1506		22	22	2,5			54	1	Carte1954
South Africa	SOU121	Sambokkraal	21,3333	-32,6833	738	607	1760	25	21	102	2,85			60	1	Gough1963
South Africa	SOU122	Koegelfontein	21,3333	-32,9833	727	425	850	8	21	59	3,15			66	1	Gough1963
South Africa	SOU123	Bothadale	22,5833	-32,7667	952	607	1457	15	19	85	2,92			56	1	Gough1963
South Africa	SOU124	Kalkkop	24,3500	-32,7167	653	87	300	8	21	24	2,63			55	1	Gough1963
South Africa	SOU125	BWI Bishopswood	22,8833	-27,7000	1169	240	1040		19	49	2,5			48	1	Carte&vanRooyen 1969
South Africa	SOU126	BWI Bishopswood	22,8833	-27,7000	1169	790	1040		21	13	2,76			57	1	Carte&vanRooyen 1969
South Africa	SOU127	DI-1 Dingle	22,9500	-27,8500	1190	550	850		21	17	2,5			52	1	Carte&vanRooyen 1969
South Africa	SOU128	Petrusville area	24,6667	-30,0833	1220	300	700		34	13	2,05			69	1	Carte&vanRooyen 1969
South Africa	SOU129	WE 1/66 Weltevrede	26,8333	-30,9000	1532	0	1100		18		2,76			49	1	Carte&vanRooyen 1969
South Africa	SOU130	SW 1/67 Oakham	29,2667	-30,1667	1676	670	1220		21	53	2,51			54	1	Carte&vanRooyen 1969
South Africa	SOU131	Brandfort area	26,4667	-28,7000	1400	150	670		26	15	2,3			60	1	Carte&vanRooyen 1969
South Africa	SOU132	Brandfort area	26,4667	-28,7000	1400	670	1580		18	11	3,18			56	1	Carte&vanRooyen 1969
South Africa	SOU133	GSO-1 Hopewell	29,3833	-28,6833	1150	310	640		32	8	2,09			67	1	Carte&vanRooyen 1969
South Africa	SOU134	GSO-1 Hopewell	29,3833	-28,6833	1150	670	670		25	6	3,05			75	1	Carte&vanRooyen 1969
South Africa	SOU135	GSO-1 Hopewell	29,3833	-28,6833	1150	850	1040		34	5	1,88			64	1	Carte&vanRooyen 1969
South Africa	SOU136	S-1 Somkele	32,1000	-28,3500	100	150	460		21	7	2,97			63	1	Carte&vanRooyen 1969
South Africa	SOU137	S-1 Somkele	32,1000	-28,3500	100	150	820		27	24	2,5			68	1	Carte&vanRooyen 1969
South Africa	SOU138	S-1 Somkele	32,1000	-28,3500	100	460	790		27	10	2,55			69	1	Carte&vanRooyen 1969
South Africa	SOU139	EIE Leeuwpoot 356 IQ	27,4967	-27,4100	1684	1830	2740		14	15	3,35			46	1	Carte&vanRooyen 1969
South Africa	SOU140	Rustenburg area	27,2500	-25,6667	1160	150	760		19	10	2,26			44	1	Carte&vanRooyen 1969

Gomes et al. - Reappraisal of Heat Flow Variations in Mainland Africa.

South Africa	SOU141	Rustenburg area	27,2500	-25,6667	1160	760	1070		25	9	2,01			49	1	Carte&vanRooyen 1969
South Africa	SOU142	PC Shaft New Consort Mine	31,0833	-25,6833	677	730	1340		20	11	2,51			49	1	Carte&vanRooyen 1969
South Africa	SOU143	US-9 Umkoanesstad	29,9000	-24,3167	832	150	610		21	14	2,22			47	1	Carte&vanRooyen 1969
South Africa	SOU144	WS-68 Wiegel shaft	30,6833	-23,9000	513	240	430		11	14	4,35			47	1	Carte&vanRooyen 1969
South Africa	SOU145	WS-68 Wiegel shaft	30,6833	-23,9000	513	430	600		12	12	5,31			63	1	Carte&vanRooyen 1969
South Africa	SOU146	Dubbeldevlei DV	21,5000	-30,5000	990	852	1497		22	4	2,85			64	1	Bullard1939
South Africa	SOU147	Carolusberg West Z.026S	17,9667	-29,6667	995	0	660		18	19	3,31			59	1	Carte&vanRooyen 1969
South Africa	SOU148	Jacomyns Pan PC2-30	21,7867	-29,3267	1045	60	160	7	14	8	3,78	8	2	53		Jones1987
South Africa	SOU149	Jacomyns Pan PC2-30	21,7867	-29,3267	1045							5	2			Jones1987
South Africa	SOU150	Doornhoutrivier	26,5683	-27,1217	1280	300	1704	10	13		4,48			41	1	Bullard1939
South Africa	SOU151	Driefontein	27,4667	-26,3500	1562	30	587	5	7		4,6			31	1	Bullard1939
Sudan	SUD1	W. Selima-1	28,3182	21,2948		100	155		14		2			29	1	Boulos1987
Sudan	SUD2	DUNGUNAB	37,0833	21,1333		1200	1600	2	35	3	2,5	80	0,7	89		1
Sudan	SUD3	ABU SHAG	37,2833	21,0500		1300	2300	3	30	7	3,3	0		100		1
Sudan	SUD4	MAGHERSU	37,2833	20,8167		1100	2250	4	35	6	2,9	0		100		1
Tanzania	TAN1	NY- 5	34,4333	-11,1000	-207	680	1,7		17	0	0,7			12		1
Tanzania	TAN2	NY- 8	34,4500	-11,0667	-182	655	1,7		67	4	0,69			46		1
Tanzania	TAN3	NY- 9	34,5333	-11,0667	-37	510	1,7		40	0	0,7			28		1
Tanzania	TAN4	NY-10	34,4833	-10,8500	-27	500	1,7		56	0	0,7			39		1
Tanzania	TAN5	NY-12	34,4167	-10,2500	-17	490	1,7		24	0	0,7			17		1
Tanzania	TAN6	NY-13	34,3833	-9,9167	48	425	1,7		11	0	0,7			8		1
Tanzania	TAN7	NY-14	34,4333	-10,2167	143	330	1,7		34	0	0,7			24		1
Tanzania	TAN8	Pemba-5	39,7000	-5,2667		0	3758	3	54	57	1,5			74		Evans1976
Tanzania	TAN9	Zanzibar-1	39,7000	-6,0500		0	3837	5	30	44	1,7			38		Evans1976
Tanzania	TAN10	Mafia-1	39,7500	-7,8833		0	3000	7	46	38	1,9			84		Evans1976
Tanzania	TAN11	Mandawa-7	39,4167	-9,4167		0	4058	7	22	38	2,5			56		Evans1976
Tanzania	TAN12	Basom/Basotu	35,1667	-4,3833	1737	80	230	15	13	2	3,5	1	1	46	1	Nyblade_etal1990
Tanzania	TAN13	Njiri	34,7000	-5,6667	1379	30	190	16	13	16	3,4	1	5,8	42	1	Nyblade_etal1990
Tanzania	TAN14	Dodoma	35,7500	-6,1833	1128	60	150	9	7	9	3,5	1	1,6	23	1	Nyblade_etal1990
Tanzania	TAN15	Solya	34,9500	-5,8333	1097	30	100	7	8	7	3,9	1	1,2	32	1	Nyblade_etal1990
Tanzania	TAN16	Siuyu	34,8833	-4,9000	1676	50	210	16	11	16	3,5	1	1,2	37	1	Nyblade_etal1990
Tanzania	TAN17	Canuck	32,7667	-3,8833	1204	84	123	5	5	5	3,9			20	1	Nyblade_etal1990
Tanzania	TAN18	Ridge 8	32,0500	-2,8833	1475	54	100	6	4	6	4,7			21	1	Nyblade_etal1990
Tanzania	TAN19	Kizaga	34,3667	-4,4167	1446	20	300	28	14	16	3,3	1	<0.5	47	2	Nyblade_etal1990

Gomes et al. - Reappraisal of Heat Flow Variations in Mainland Africa.

Tanzania	TAN20	Holili	37,6333	-3,3833	884	40	130	9	20	9	3,1	1	0,6	62	1	Nyblade_etal1990
Tanzania	TAN21	Olboloti	36,2833	-5,2167	1318	50	190	14	11	9	3,8			41	1	Nyblade_etal1990
Tanzania	TAN22	Angatasere	37,2833	-5,4000	1204	100	220	12	20	12	2,6			50	1	Nyblade_etal1990
Tanzania	TAN23	Longido	36,4667	-2,6167	1676	50	230	18	17	18	2,6	1	1,7	44	1	Nyblade_etal1990
Tanzania	TAN24	Arkatan	36,2833	-3,3833	1387	20	110	9	25	9	1,6			39	1	Nyblade_etal1990
Tanzania	TAN25	Mishamo	30,5000	-5,6167	1320	10	110	10	18	2	6,2	1	<0.5	109	1	Nyblade_etal1990
Tunisia	TUN1	TE1	10,0367	30,6200			3265		39		2,5			98		Lucazeau&BenDhia1989
Tunisia	TUN2	EC2	9,4750	31,0417			1486		34		2,5			86		Lucazeau&BenDhia1989
Tunisia	TUN3	OK1	9,8417	31,2467			930		42		2,5			105		Lucazeau&BenDhia1989
Tunisia	TUN4	MG1	10,1533	31,2517			1472		31		2,5			78		Lucazeau&BenDhia1989
Tunisia	TUN5	EZ2	9,5000	31,3233			3847		30		2,5			75		Lucazeau&BenDhia1989
Tunisia	TUN6	SB1	9,7417	31,4167			2450		26		2,5			66		Lucazeau&BenDhia1989
Tunisia	TUN7	ZTE	9,3683	31,4883			1502		28		2,5			70		Lucazeau&BenDhia1989
Tunisia	TUN8	EB53	9,2717	31,6600					28		2,5			69		Lucazeau&BenDhia1989
Tunisia	TUN9	DN1	9,8783	31,6900			2138		27		2,5			67		Lucazeau&BenDhia1989
Tunisia	TUN10	SN1	9,9050	31,9233			2451		32		2,5			80		Lucazeau&BenDhia1989
Tunisia	TUN11	KEE2	9,1417	31,9350			3379		36		2,5			90		Lucazeau&BenDhia1989
Tunisia	TUN12	MR1	10,2183	31,9433			3189		32		2,5			79		Lucazeau&BenDhia1989
Tunisia	TUN13	MR2	10,2467	31,9850					31		2,5			77		Lucazeau&BenDhia1989
Tunisia	TUN14	BZ1	9,4217	32,0583					31		2,5			77		Lucazeau&BenDhia1989
Tunisia	TUN15	DEK1	9,0917	32,5850			3189		28		2,5			69		Lucazeau&BenDhia1989
Tunisia	TUN16	OS1	9,9167	32,5850			2395		35		2,5			88		Lucazeau&BenDhia1989
Tunisia	TUN17	BYO1	8,3983	32,6783			3462	3	24		3,4			81		Lucazeau&BenDhia1989
Tunisia	TUN18	MHB1	9,6267	32,8483					32		2,5			80		Lucazeau&BenDhia1989
Tunisia	TUN19	EG1	8,3300	33,0350			3229		42		2,5			106		Lucazeau&BenDhia1989
Tunisia	TUN20	CHR2	9,5267	33,0833					31		2,5			78		Lucazeau&BenDhia1989
Tunisia	TUN21	HBR	9,7717	33,2417					37		2,5			92		Lucazeau&BenDhia1989
Tunisia	TUN22	SAB1	8,6450	33,2433			4917		34		2,5			85		Lucazeau&

															BenDhia1989
Tunisia	TUN23	ALG1	8,7283	33,2950			3965	5	26		3,43			88	Lucazeau& BenDhia1989
Tunisia	TUN24	BS1	9,7167	33,3133			2815	5	25		2,65			67	Lucazeau& BenDhia1989
Tunisia	TUN25	SABN2	8,3583	33,3833					31		2,5			77	Lucazeau& BenDhia1989
Tunisia	TUN26	SABN1	8,5450	33,4017			3975		31		2,5			78	Lucazeau& BenDhia1989
Tunisia	TUN27	ELFRA	8,5450	33,4367			3122		34		2,5			84	Lucazeau& BenDhia1989
Tunisia	TUN28	TB1	10,1967	33,4483			2685		32		2,5			81	Lucazeau& BenDhia1989
Tunisia	TUN29	MA1	9,2250	33,6433					27		2,5			67	Lucazeau& BenDhia1989
Tunisia	TUN30	CF1	9,6233	33,9067			4950	6	24		2,94			72	Lucazeau& BenDhia1989
Tunisia	TUN31	ZB1	9,8050	34,0583			2375		28		2,5			71	Lucazeau& BenDhia1989
Tunisia	TUN32	ABDESSDE	8,5000	34,3333		70	145		16		2,5			40	Lucazeau& BenDhia1989
Tunisia	TUN33	AOULET	8,5000	34,3333		30	250		20		2			40	Lucazeau& BenDhia1989
Tunisia	TUN34	GOUIFLA	8,5000	34,3333		50	240		20		2			40	Lucazeau& BenDhia1989
Tunisia	TUN35	MOULARES	8,5000	34,3333		50	200		15		2			30	Lucazeau& BenDhia1989
Tunisia	TUN36	OULED	8,5000	34,3333		100	235		18		2,5			45	Lucazeau& BenDhia1989
Tunisia	TUN37	REDEYEF	8,5000	34,3333		70	220		24		2,5			60	Lucazeau& BenDhia1989
Tunisia	TUN38	BK1	9,4317	34,3400			2479	6	27		3,3			88	Lucazeau& BenDhia1989
Tunisia	TUN39	BL1	7,9767	34,3467					26		2,5			66	Lucazeau& BenDhia1989
Tunisia	TUN40	BL1b	7,9767	34,3467					37		2,5			93	Lucazeau& BenDhia1989
Tunisia	TUN41	ABK1A	10,0867	34,7183					36		2,5			89	Lucazeau& BenDhia1989
Tunisia	TUN42	ABK1	10,0933	34,7250					32		2,5			81	Lucazeau& BenDhia1989
Tunisia	TUN43	MBA1	8,3933	34,7633					28		2,5			69	Lucazeau& BenDhia1989
Tunisia	TUN44	HKS1	10,1600	34,7650			1306		37		2,5			93	Lucazeau& BenDhia1989
Tunisia	TUN45	SEB1	10,4483	34,8833					40		2,5			100	Lucazeau& BenDhia1989
Tunisia	TUN46	KB1	8,5217	34,9867					42		2,5			105	Lucazeau& BenDhia1989
Tunisia	TUN47	KEK1	8,6283	35,1117					25		2,5			63	Lucazeau& BenDhia1989

Tunisia	TUN48	TAM1	8,4600	35,1250			2549		27		2,5		67	Lucazeau&BenDhia1989
Tunisia	TUN49	DER1	8,5017	35,1400			4000		28		2,5		71	Lucazeau&BenDhia1989
Tunisia	TUN50	BT2	10,3400	35,1583					36		2,5		91	Lucazeau&BenDhia1989
Tunisia	TUN51	BT1	10,3317	35,1600					35		2,5		88	Lucazeau&BenDhia1989
Tunisia	TUN52	SEM3	8,8767	35,3383					22		2,5		55	Lucazeau&BenDhia1989
Tunisia	TUN53	KT1	10,1617	35,3717			3183		32		2,5		80	Lucazeau&BenDhia1989
Tunisia	TUN54	DLB	8,8333	35,4467			829		35		2,5		88	Lucazeau&BenDhia1989
Tunisia	TUN55	BEG1	9,1583	35,4600					35		2,5		88	Lucazeau&BenDhia1989
Tunisia	TUN56	ASS1	8,4583	35,4667					50		2,5		126	Lucazeau&BenDhia1989
Tunisia	TUN57	TI1	9,0267	35,4800					27		2,5		68	Lucazeau&BenDhia1989
Tunisia	TUN58	BOUARARA	10,0000	35,5000		130	175		30		2		60	Lucazeau&BenDhia1989
Tunisia	TUN59	ELKABBA	10,0000	35,5000		80	165		20		2,5		50	Lucazeau&BenDhia1989
Tunisia	TUN60	FERZA	10,0000	35,5000		50	110		15		2,5		38	Lucazeau&BenDhia1989
Tunisia	TUN61	HAFFOUZ	10,0000	35,5000		170	250		20		2,0		40	Lucazeau&BenDhia1989
Tunisia	TUN62	ZAS1	10,0400	35,5833					34		2,5		84	Lucazeau&BenDhia1989
Tunisia	TUN63	AEG1	9,4750	35,5900					27		2,5		68	Lucazeau&BenDhia1989
Tunisia	TUN64	ZAW1	9,9383	35,6000					28		2,5		69	Lucazeau&BenDhia1989
Tunisia	TUN65	THA1	8,6017	35,6167			4000		40		2,5		101	Lucazeau&BenDhia1989
Tunisia	TUN66	OR1	8,9283	35,6750					36		2,5		89	Lucazeau&BenDhia1989
Tunisia	TUN67	KRN1	10,1000	35,7017			1213		28		2,5		69	Lucazeau&BenDhia1989
Tunisia	TUN68	RS1	9,8817	35,7100					31		2,5		77	Lucazeau&BenDhia1989
Tunisia	TUN69	OBL1	9,3517	35,7817			3194		29		2,5		73	Lucazeau&BenDhia1989
Tunisia	TUN70	RS101	9,9433	35,7817			2498		31		2,5		77	Lucazeau&BenDhia1989
Tunisia	TUN71	SD1	9,1850	35,8817			1372		24		2,5		59	Lucazeau&BenDhia1989
Tunisia	TUN72	DK1	9,9467	35,8933					50		2,5		125	Lucazeau&BenDhia1989
Tunisia	TUN73	SI1	9,4017	35,9750			1001		42		2,5		105	Lucazeau&BenDhia1989

Gomes et al. - Reappraisal of Heat Flow Variations in Mainland Africa.

Tunisia	TUN74	EK1	8,8050	35,9933			2660		25		2,5		63	Lucazeau& BenDhia1989
Tunisia	TUN75	EH1	9,9317	36,1667			1665		35		2,5		88	Lucazeau& BenDhia1989
Tunisia	TUN76	EF1	10,4217	36,1717			1500		30		2,5		75	Lucazeau& BenDhia1989
Tunisia	TUN77	MN1	9,6033	36,1917			4348		29		2,5		72	Lucazeau& BenDhia1989
Tunisia	TUN78	BEGON	9,5883	36,2400					37		2,5		92	Lucazeau& BenDhia1989
Tunisia	TUN79	ZAGHOUAN	10,1667	36,4167		50	250		70		2,9		200	Lucazeau& BenDhia1989
Tunisia	TUN80	BIRDRESS	10,4167	36,4167		20	250		30		2,5		75	Lucazeau& BenDhia1989
Western Sahara	WES1	A77	-15,8161	23,1981		610	610	1	45	6	2,5		112	Rimi1990
Western Sahara	WES2	E66	-15,5353	23,5000	138	132	1640	2	50	6	2,5		126	Rimi1990
Western Sahara	WES3	E65	-15,8586	23,5756	54	150	1530	2	36	7	2,5		90	Rimi1990
Western Sahara	WES4	A67	-14,8000	23,7833	242	759	759	1	30	7	2,5		75	Rimi1990
Western Sahara	WES5	W56	-14,1669	24,3997	252	1614	1614	1	36	5	2,5		89	Rimi1990
Western Sahara	WES6	WL4	-13,9544	25,3861		1242	2533	3	26	8	2,5		64	Rimi1990
Western Sahara	WES7	TAR	-14,7272	25,4106	70	448	3969	4	30	17	2,5		74	Rimi1990
Western Sahara	WES8	ORM	-12,6833	25,5833	516	731	731	1	31	10	2,5		77	Rimi1990
Western Sahara	WES9	AK1	-12,5861	25,7194	246	824	824	1	26	4	2,5		66	Rimi1990
Western Sahara	WES10	AK2	-12,6081	25,7247	279	795	795	1	28	4	2,5		69	Rimi1990
Western Sahara	WES11	AK2	-12,6161	25,7328	301	809	809	1	24	6	2,5		61	Rimi1990
Western Sahara	WES12	UTT	-12,8742	25,9242		1489	1883	2	35	8	2,5		87	Rimi1990
Western Sahara	WES13	TDT	-12,6667	26,5000		700	700	1	29	21	2,5		72	Rimi1990
Western Sahara	WES14	GAD	-12,5000	26,6667		708	708	1	27	23	2,5		68	Rimi1990
Western Sahara	WES15	SMR	-11,7597	26,7103		1250	1250	1	38	7	2,5		96	Rimi1990
Western Sahara	WES16	SGH	-12,9000	26,8000		1404	1404	1	31	19	2,5		77	Rimi1990
Western Sahara	WES17	ANH	-11,9956	27,1842	300	550	550	1	33	5	2,5		83	Rimi1990
Western Sahara	WES18	AMQ	-12,8297	27,2067	112	455	4113	4	22	9	2,5		56	Rimi1990
Western Sahara	WES19	F13	-11,6044	27,3781		476	1703	3	26	10	2,5		64	Rimi1990

Western Sahara	WES20	DAR	-13,2131	27,4819		755	4236	5	23	16	2,5			57		Rimi1990
Western Sahara	WES21	HGN	-12,3586	27,5200		225	2401	2	26	7	2,5			66		Rimi1990
Western Sahara	WES22	WL6	-9,9594	27,5439		1519	2991	2	27	10	2,5			67		Rimi1990
Zambia	ZAM1	Kinsenda KIN80B	27,7396	-12,3745	1295				24		2,94			71	1	Sebagenzi_et al 1993
Zambia	ZAM2	Kinsenda KIN122	27,7396	-12,3745	1285				21		3,03			65	1	Sebagenzi_et al 1993
Zambia	ZAM3	Kinsenda KIN149	27,7396	-12,3745	1274				19		2,97			58	1	Sebagenzi_et al 1993
Zambia	ZAM4	Kinsenda KIN144	27,7396	-12,3745	1271				24		3,01			72	1	Sebagenzi_et al 1993
Zambia	ZAM5	Kipushi MW2	27,0144	-11,9109	1302				21		3,3			69	1	Sebagenzi_et al 1993
Zambia	ZAM6	Luangwa 1	31,6333	-12,4167	763	100	300	20	22	20	3,5			77	1	Nyblade_et al 1990
Zambia	ZAM7	Luangwa 2	31,3667	-13,3000	576	100	190	9	27	9	2,7			73	1	Nyblade_et al 1990
Zambia	ZAM8	Machili GS 108	25,1333	-16,8667	1095	164	302		22	13	3			67	1	Chapman& Pollack1977
Zambia	ZAM9	Munali Hills MH 23	28,1333	-15,9167	1097	70	309		23	7	2,82	23	0,55	64		Chapman& Pollack1977
Zambia	ZAM10	Munali Hills MH 43	28,1333	-15,9167	1097	27	290		23		2,82	16	2,25	64		Chapman& Pollack1977
Zambia	ZAM11	Lubombo LUB1	27,9167	-15,8167	1009	40	360		25	10	2,81	24	2,5	71	1	Chapman& Pollack1977
Zambia	ZAM12	Chalalobuka CH 59-12	28,5500	-15,2167	1105	20	164		22	13	3,11	22	2,3	68		Chapman& Pollack1977
Zambia	ZAM13	Chalalobuka CH 59-8	28,5500	-15,2167	1105	20	150		23	7	2,63	22	2,3	61		Chapman& Pollack1977
Zambia	ZAM14	Chalalobuka CH 70-7	28,5500	-15,2167	1105	30	144		23	16	3,12	22	2,3	72		Chapman& Pollack1977
Zambia	ZAM15	Chalalobuka CH 78-42	28,5500	-15,2167	1105	50	161		22	11	2,9			64		Chapman& Pollack1977
Zambia	ZAM16	Mkushi COL2	29,2000	-13,9167	1143	114	279		19	20	3,24	25	1,8	61		Chapman& Pollack1977
Zambia	ZAM17	Mkushi COL5	29,2000	-13,9167	1143	64	201		21	16	2,98	26	1,9	61		Chapman& Pollack1977
Zambia	ZAM18	Lumpuma LUP 7	28,0500	-13,0833	1204	20	198		24	19	2,73	15	2,4	65	1	Chapman& Pollack1977
Zambia	ZAM19	Luanshya Mine 28 Shaft	28,3167	-13,0833	1256	0	1150		23	45	3,3			76		Chapman& Pollack1977
Zambia	ZAM20	Luanshya Mine BX 168	28,3167	-13,0833	1256	395	575		18	7	4,28			76		Chapman& Pollack1977
Zambia	ZAM21	Luanshya Mine DH 2231	28,3167	-13,0833	1256	681	852		18	20	3,07			55		Chapman& Pollack1977
Zambia	ZAM22	Luanshya Mine DH 3465	28,3167	-13,0833	1256	680	994		20	15	4,05			81		Chapman& Pollack1977
Zambia	ZAM23	Luanshya Mine P 38	28,3167	-13,0833	1256	960	1150		20	27	3,3			65		Chapman& Pollack1977

Gomes et al. - Reappraisal of Heat Flow Variations in Mainland Africa.

Zambia	ZAM24	Ichimpe PE 2	28,1167	-12,7333	1210	20	500		19	11	3,89			74	1	Chapman& Pollack1977
Zambia	ZAM25	Chimwungo MM 632	25,8833	-12,2833	1340	20	163		22	13	2,43			54		Chapman& Pollack1977
Zambia	ZAM26	Chimwungo MM 655	25,8833	-12,2833	1340	60	140		24	9	2,16			52		Chapman& Pollack1977
Zambia	ZAM27	Chimwungo MMC 458	25,8833	-12,2833	1340	20	175		21	19	2,17	10	2,5	45		Chapman& Pollack1977
Zambia	ZAM28	Chimwungo MMC 705	25,8833	-12,2833	1340	20	140		25	12	2,7	10	2,5	67		Chapman& Pollack1977
Zambia	ZAM29	Malundwe MMB 152	25,8167	-12,2333	1290	120	208		21	19	2,65	10	2,5	57		Chapman& Pollack1977
Zambia	ZAM30	Malundwe MMB 553	25,8167	-12,2333	1290	40	113		25	11	2,76	10	2,5	69		Chapman& Pollack1977
Zambia	ZAM31	Lubwe MMD 468	25,9500	-12,1667	1356	20	176		25	18	2,21	10	2,5	54	1	Chapman& Pollack1977
Zimbabwe	ZIM1	Renco	31,5833	-20,6333	660	130	350		17	47	2,8	3	0,8	49	3	Nyblade_etal1990
Zimbabwe	ZIM2	Venice	29,7667	-18,5000	1097	60	240		10	19	3,4	1	<0.5	34	1	Nyblade_etal1990
Zimbabwe	ZIM3	Blanket	28,9000	-20,8500	1050	660	750		11	9	3,1			32	1	Nyblade_etal1990
Zimbabwe	ZIM4	Redwing	32,6667	-18,8833	1160	220	600		17	46	3,2	1	0,8	62	2	Nyblade_etal1990
Zimbabwe	ZIM5	Epoch	29,2667	-20,4333	1200	420	572		16	25	3,4			44	2	Nyblade_etal1990
Zimbabwe	ZIM6	Shangani	29,2333	-19,6833	1400	490	600		12	11	3,7			40	1	Nyblade_etal1990
Zimbabwe	ZIM7	Great Dyke	30,4167	-18,1000	1219	10	330		14	32	2,7			38	1	Nyblade_etal1990
Zimbabwe	ZIM8	Netherburn	30,1833	-19,2667	1500	40	220		29	18	2,3			56	1	Nyblade_etal1990
Zimbabwe	ZIM9	Kanyemba	30,4167	-16,0000	400	30	170		14	25	3,2	1	0,9	44	1	Nyblade_etal1990
Zimbabwe	ZIM10	Hwange	26,4167	-18,3833	780	10	150		23	7	4,8			110	1	Nyblade_etal1990