

Terrestrial Heat Flow Studies and the Structure
of the Lithosphere

P R E L I M I N A R Y P R O G R A M M E

Monday, May 31

afternoon Registration in Liblice
Accommodation in the Castle or in the hotels
in Mělník or Mladá Boleslav

evening Informal meeting

Tuesday, June 1

morning Opening ceremony

8:30 Greetings - Representative of the Czechoslovak
Academy of Sciences
Prof. L. Stegena - President of the
International Heat Flow Commission

Short break

9:00 Standards in Geothermics

Convenor : R. Haenel

Introductory remarks by the Convenor

9:05 Temperature

Discussion Leader : N. Balling

Reporter : G. Vasseur

10:30 Coffee break

11:00 Thermal conductivity

Discussion Leader : A.E. Beck

Reporter : V.M. Hamza

12:30 Lunch break

afternoon

14:00 Heat flow density

Discussion Leader : V. Čermák

Reporter : Ph. Bodmer

15:30 Coffee break

16:00 Papers related to Standards in Geothermics

Chairman : R. Haenel

Co-chairman : J. Wohlenberg

16:00

U. Werner : Three-dimensional calculations of the
temperature field in mountain ranges

- 16:15 V. Čermák : Review on the effect of the past climatic changes on the underground temperature field /A/
- 16:30 Ch. Clauser : A correction for ground-temperature data using non-periodic short-, middle- and long-term surface-temperature series /A/
- 16:45 Discussion and short contributions :
- D.S. Chapman : On the depth of a borehole as a reliability factor in heat flow studies
- V.M. Hamza : "Standard" procedures adopted for measurement of terrestrial heat flow density in Brazil
- S. Gläser and E. Hurtig : The correction of borehole temperatures and its influence on geothermal maps /A/
- D. Stromeyer : Downward continuation of heat flow data
- V.I. Zui : On the accuracy of heat flow determination /A/
- G. Vasseur : Paleotemperatures in France and paleoclimatic corrections
- A.E. Beck : Errors in temperature gradient measurements due to climatic factors and underground water flows
- Sharbatyan A. and L. Yangurazova : Influence of glaciations on the geothermal field /A/
- D.S. Chapman : The influence of groundwater systems on heat flow measurements
- M.J. Drury : Perturbations to temperature gradients by water flows in plutons
- J. Goguel : Effect of deep water circulation on local heat flow
- Ph. Bodmer and L. Rybach : The effect of water circulation on heat flow data /A/

18:00 Finish

Evening

- 19:30 Special meeting of the Working Group for preparation of the IHFC Guidelines for Heat Flow Density Determination and Representation
- 21:00 IHFC Business Meeting

Wednesday, June 2

morning

- 8:30 Thermophysical Parameters of Rocks
Chairman and Co-chairman : L. Stegena, R.F. Roy
- 8:30 A.E. Beck : Review paper : Methods and techniques of measuring the thermophysical properties of rocks and minerals /Invited/ /A/

- 9:00 H. Villinger : Determination of thermal conductivity in situ /A/
- 9:15 L. Rybach and G. Buntebarth : The relationship of heat generation with density, seismic velocity and rock type /A/
- 9:30 Discussion and short contributions :
- V. Vacquier : The dependence of the thermal conductivity of sedimentary rocks on depth of burial
- G. Buntebarth : Thermal conductivity of sedimentary rocks at elevated pressure and temperature
- L. Rybach : On the thermal conductivity of low porosity crystalline rocks
- M.J. Drury : The measurement of thermal diffusivity of rock cores by Ångström's method
- S. Gasharov : A transient method and thermophysical parameters of rocks from Dobrudja - North Bulgaria
- K. Sekiguchi : Estimating methods of subsurface temperatures and in-situ thermal conductivity of geologic sequence in a deep well
- 10:30 Coffee break
- 11:00 Heat Flow Data and Maps
Chairman : A.M. Jessop
- 11:00 D.S. Chapman : Global heat flow, an update /Invited/
- 11:30 J.H. Sass and A.H. Lachenbruch : Heat flow from the crust of the United States /Invited/ /A/
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- 12:00 W.D. Gosnold, Jr. : Heat flow studies in the Great Plains of the United States /A/
- 12:15 V.M. Hamza : A preliminary report on the present state of geothermal investigations in South America
- 12:30 Lunch break
- afternoon
- 14:00 Heat Flow Data and Maps /Cont./
Chairman and Co-chairman : H.N. Pollack and L. Rybach
- 14:00 R.I. Kutas : Heat flow and its interpretation in the USSR /Invited/
- 14:15 S. Uyeda : Review of heat flow studies in the Eastern Asia and Western Pacific Region /Invited/ /A/
- 14:30 Discussion and short contributions :
- L. Rybach : On the contouring of heat flow maps
- O.V. Zavgorodnaya and V.V. Gordienko : Procedure and results of heat flow measurements near the Earth's surface. Map construction principles. /A/

- P. Sychev : Maps of anomalous heat flow
 G. Vasseur : Heat flow density measurements in France
 J. Šafanda : Revised version of the heat flow density pattern for the Bohemian Massif /A/
 J.G. Lindqvist : Heat flow measurements in the sediments of lakes in north Sweden

G. Derăbescu, M. Fox and M. Andriescu : New heat flow data for the Romanian territory /A/

H. Villinger : New heat flow data of the west coast of Morocco /A/

S.V. Lysak : Heat flow in the south of East Siberia /A/

Balchayev V.T. and V.N. Daviarkin : Thermal anomaly of the middle part of the Verkhoyansk foredeep /A/

A. Thienprasert : Heat flow in northern Thailand

V.M. Hamza : Heat generation of the rocks in the Pre-Cambrian shields

V. Čermák, M. Krešl, M. Nápoles-Pruna, R. Tenreyro-Perez, L.M. Torres-Paz and J.J. Valdés : Preliminary assessments of the terrestrial heat flow in Cuba /A/

16:00 Coffee break

16:30 Geothermal Models of the Lithosphere
 Chairman : J.H. Sass

16:30 H.N. Pollack : Do the continental cratons have deep thermal roots ? /Invited/

17:00 R.F. Roy : Distribution of the radioelements in the crust

17:15 S. Uyeda and S. Honda : Thermal processes in subduction zones /A/

17:30 P.M. Sychev, V.V. Soinov, O.V. Veselov and N.A. Volkova : Heat flow and geodynamics problems in a transitional zone from Asia to the Pacific /A/

17:45 E.A. Lubimova and O.I. Parphenuk : Heat flow and the late evolution of the lithosphere /A/

18:00 Finish

Evening

20:00 Vocal concert of opera arias performed by soloists of the Opera of the National Theatre in Prague -- Swedish Hall of the Liblice Castle

Thursday, June 3

morning

- 8:30 Geothermal Models of the Lithosphere /Cont./
Chairman and Co-chairman : D.S. Chapman, G. Buntebarth
- 8:30 P. Dövényi, F. Horváth, P. Liebe, I. Erki, J. Gálfi, K. Korim and L. Stegena : Geothermics of the Pannonian Basin /A/
- 8:45 L. Bodri and B. Bodri : Numerical studies of crustal thinning in thermally active zones /A/
- 9:00 G. Vasseur : Geothermal and geodynamical evolution of the French Massif Central from Oligocene
- 9:15 V.V. Gordienko and O.V. Zavgorodnaya : Continental heat flow anomalies interpretation in complex geophysical studies of the tectonosphere /A/
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- 9:30 ~~M. Gupta : Moho heat flow in the Indian and other Precambrian shields : Constraints on estimates and implications~~
- 9:45 Discussion and short contributions :
- V. Čermák : Surface heat flow pattern and deduced deep temperatures as a tool to estimate the lithospheric thickness /A/
- S. Veliciu : Geothermal models of the lithosphere for the Romanian Carpathians /A/
- S.U. Milanovski and I.N. Reshetnikova : The deep geothermal structure and the mantle heat flows along the European profile : Barents Sea - East Alps /A/
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- ~~S. Werner : Mantle processes underneath the Alps~~
- E.A. Lubimova, V.M. Luboshitz and V.N. Nikitina : Interpretation of heat flow anomalies at oceanic ridge axial zones /A/
- 10:30 Coffee break
- 11:00 Geothermal models of the lithosphere /Cont./
Chairman and Co-chairman : R.I. Kutas, W.D. Gosnold
- Discussion and short contributions :
- V.A. Golubev : Geothermics of the Lake Baikal and the origin of local anomalies of heat flow /A/
- Yu.A. Zorin and S.O. Osokina : The model of transient temperature field of the Baikal Rift lithosphere /A/
- E.A. Lubimova, N.P. Kostenko, R.M. Prol-Ledesma, V.V. Soinov : Joint geothermal and geomorphological studies of lateral profiles in Mexican and Kuril volcanic belts /A/

R.M. Prol-Ledesma and T. Gonzáles-Morán : Temperature field continuation applied to a rift zone in the Gulf of California /A/

T. Gonzáles-Morán : Continuation of the temperature field in southern Mexico

E.I. Suetnova : On the variation of heat flow and the deep temperatures of the Earth /A/

B. Werner : Limitations in interpreting surface heat flow as an expression of mantle convection

12:30 Lunch break

afternoon

14:00 Departure for Prague -- free sightseeing

19:30 Theater performance /pantomime/ "Funambules 77" in the Theater on the Balustrades, Prague

23:00 Departure for Liblice /from the theater/

Friday, June 4

morning

8:30 Correlation Studies between Heat Flow and Other Parameters

Chairman and Co-chairman : S. Uyeda, E. Hurtig

8:30 N.I. Arshavskaya : Heat flow - heat generation studies in the various tectonic areas /A/

8:45 A.M. Jessop : Heat flow and heat generation in Canada

9:00 L. Stegena : Geothermics and seismicity in central Europe

9:15 V. Hanuš and J. Vaněk : Subduction induced fracture zones and distribution of hydrothermal activity in Mexico /A/

9:30 Discussion and short contributions :

A. Thienprasert : Preliminary study of heat generation in Thailand

R.I. Kutas and S.I. Subbotin : Heat flow, radiogenic heat and crustal thickness in the south-west of the USSR /A/

V. Čermák : Heat flow and crustal thickness /A/

B.G. Polyak : Heat flow and isotopic composition of the terrestrial Helium : their correlation and its tectonophysical interpretation

W.D. Gosnold, jr. : Some evidence of the "D" value in the exponential distribution of crustal radioactivity

B. Bodri and L. Bodri : On the correlation between heat flow and crustal thickness

S.Nielsen and N. Balling : The trade-off between resolution and variance in continuous temperature logging

J. Kubík : Relationship between heat flow and P_n velocity distribution in Europe /A/

R. Green : Gravity map and heat flow measurements in Indonesia /A/

F.W. Jones : Geothermal gradients, aeromagnetism and gravity in northwestern Alberta, Canada

L.A. Tsibulya : Heat flow correlation to other geological and geophysical data /A/

G.I. Svanidze : Relations of heat flow to other geophysical and geological data in the Caucasus region

A.Sh. Mukhtarov : Temperature variations in seismic regions of the Caucasus /A/

10:30 Coffee break

11:00 Miscellaneous : Marine Heat Flow Measurements, Exploration Geothermics, Use of Industrial Data
Chairman and Co-chairman : J.Goguel, D.S.Parasnis

11:00 E.E. Davis and C.R.B.Lister : Some contemporary marine heat flow measurements techniques and their application to contemporary geothermal problems /A/ /Invited/

11:30 D.S. Parasnis : Heat flow measurements in ore prospecting /Invited/ /A/

12:00 V. Vacquier : Oil fields, a source of heat flow data

12:15 Discussion and short contributions :

H.L. Lam and F.W. Jones : Some results from bottom-hole temperature data from the Western Canadian Sedimentary Basin /A/

R.T. Rojandzeva : An experiment for field geothermal application in oil exploration

Ch. Clauser : Temperature gradients in shallow groundwater observation wells of the northern Rheingraben, first results /A/

A.M. Jessop : The use of industrial data

12:30 Lunch break

afternoon

14:00 Miscellaneous : Paleogeothermics, Heat Flow Estimates, Geothermal Processes, Mathematical Models

Chairman and Co-chairman : V.Vacquier, M.Thienprasert

14:00 G. Buntebarth : Geothermal conditions of the upper crust in some areas during geological history /A/ /Invited/

- 14:30 Discussion and short contributions :
- J. Majorowicz : Heat flow and vitrinite reflectance studies in some sedimentary basins in the platform areas - some new data in paleogeothermics
- S. Uyeda and M. Yamano : Heat flow estimation by gas-hydrate /A/
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- T. Goldfarb : Geothermal systems and geothermal heat flow
- S. Kozdovskiy : Mathematical modelling of natural thermal processes in geothermal wells /A/
- V.M. Luboshits : Numerical models of local geothermal inhomogeneities /A/
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- V. Ivanova and P. Gornova : On the transient thermal field in the borehole and the surrounding rocks /A/
- 15:30 Coffee break
- 16:00 Miscellaneous : The Use of Terrestrial Heat
Chairman and Co-chairman : R.Green, P.M.Sychev
- 16:00 A.M.Jessop : Geothermal energy in Canada
- 16:15 Discussion and short contributions :
- C.N.Garagunis and M.N. Karagunis : The thermomineral springs of Kavasila, near Ioannina /NW Greece/ : geology, exploitation and medical qualities /A/
- M.N. Karagunis : Natural thermal "steams" at Amaranantos, near Ioannina, Greece : possibilities of therapeutical applications /A/
- C.N. Garagunis and M.N. Karagunis : Hydrogeology, exploitation and balneological utilization of the thermal waters of the island Ikaria, Greece /A/
- C.N. Garagunis, J.D. Zambakas and C.J. Trikolos : Hydrogeological and climatological study of the athmothermal springs of the area of Amaranantos, NW Greece /A/
- 17:00 Final remarks, Conclusions and Recommendations
Chairman : A.H. Lachenbruch
- 18:00 Finish
- evening
- 20:00 Farewell Party - Cocktails -- Swedish Hall of the Liblice Castle

Saturday, June 5

8:00 and 10:00 Departures for Prague by bus