



## Global map of heat flow on a 2 degree grid - digitally available

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A global map of surface heat flow is developed on a 2° by 2° equal area grid, and is made available digitally. It is based on a global heat flow data set of over 38,000 measurements, very similar to that used in Davies & Davies (2010). The map consists of three components.

Firstly, in regions of young ocean crust (<67.7Ma) the model estimate uses a half-space conduction model based on the age of the oceanic crust, using parameters of Jaupart et al., (2007). This is done since it is well known that raw data measurements are frequently influenced by significant hydrothermal circulation.

Secondly in other regions of data coverage the estimate is based on data measurements. At the map resolution these two categories (young ocean, data covered) cover 65% of Earth's surface. The estimate has been developed in two different ways. In one way the mean value is used and in the second the median is used. The median estimate might be expected to be less sensitive to outliers.

Thirdly, for all other regions the estimate is based on the assumption that there is a correlation between heat-flow and geology. This is undertaken using the CCGM (2000) digital geology map. This assumption is assessed and the correlation is found to provide a minor improvement over assuming that heat flow would be represented by the global average. The estimate for Antarctica is guided by proxy measurements.

All the work is undertaken using GIS methods. Estimates are made of the errors for all components. The results have been made available as digital files, including shapefiles and tab-delimited and csv ASCII files. In addition to the equal area grid, the results are also available on an equal longitude grid. The map has been published –Davies (2013). The digital files are available in the supplementary information of the publication.

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Davies JH & Davies DR, (2010) Earth's surface heat flux, *Solid Earth*, 1, 5-24, [www.solid-earth.net/1/5/2010/](http://www.solid-earth.net/1/5/2010/).

Jaupart C, Labrosse S, Mareschal J-C, (2007) Temperatures, heat and energy in the mantle of the Earth, in *Treatise on Geophysics, v7 Mantle Convection*, ed D. Bercovici, 253-303, Elsevier, Amsterdam