

Heat...

(PC only)

heat flow, temperature & maturation modelling

Heat is a 1D forward modelling package for predicting heat flow, maturation and horizon temperature histories from well or cross-section data.

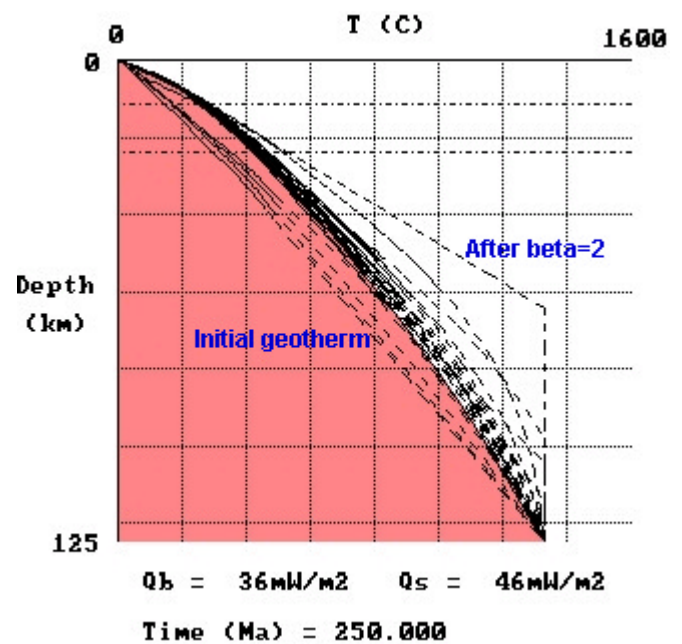
Heat allows the user to input a 1D section and very quickly model the thermal and maturation history.

The following variables are incorporated in the calculations:

- Whole-lithosphere thermal perturbation (with adjustable lithosphere parameters).
- Burial history, defined by input stratigraphy and lithology (compaction is incorporated).
- Tectonic history, with the ability to model the thermal perturbation from multiple rift events and their subsequent relaxation.
- Crustal and lithosphere thinning, defined by the tectonic history. Lithosphere thinning can be considered as uniform with depth or depth-dependent.
- Crustal and sediment radiogenic heat input.
- The thermal consequences of igneous intrusion into the sediment pile.

Heat predicts:

- Interval temperature profiles and source rock maturation (using Burnham & Sweeney Type III Kinetics) both of which can be directly compared against present day downhole temperatures and maturation data.
- Top-basement and top sediment heat-flow histories.
- Horizon temperature histories, from the basement to the surface.
- Source rock maturation indicators in the form of vitrinite reflectance values which can be very easily calibrated against downhole temperature and vitrinite reflectance data.



The real power of Heat becomes apparent when it is used conjunction with tectonic modelling (**Stretch & FlexDecomp**) for estimating stretching factors, the results of which can be fed into Heat for initiation of the full thermal model. No other thermal modelling package offers this opportunity to integrate so tightly with sophisticated tectonic modelling, thus eliminating one of the great uncertainties from standard thermal modelling techniques.