

New Evaluation of the Heat Flow in Morocco

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The thermal field in sedimentary basins of continental margins is disturbed by subsurface water circulations in onshore area while classical oceanic measurements in offshore area are disturbed by seasonal fluctuations induced by surface marine currents.

The study aims to propose a new analysis of terrestrial heat flow along the Moroccan continental margin, based on rocks thermal conductivity estimate from the oil wells geophysical logs. This method uses the neurons networks technique which has been tested successfully worldwide in the ODP wells. Bottom Hole Temperatures are corrected by using the cylindrical source models. The geophysical logs data will be reduced in order to estimate the heat flow, as well as the in-depth temperatures distribution. In the second time, the study will also examine the possible presence of the Bottom Simulating Reflectors characterizing a thermodynamic interface between methane hydrates and free gases. These BSR can be interpreted in term of temperature and integrated in a total analysis of the present day thermal transfers. The scientific repercussions will relate to the total knowledge of heat transfers on the continental margins and from an economic point of view the study contributes to a better understanding of the hydrocarbon systems and the low-mean enthalpy geothermal potential.