

**THE MODELLING OF THE THERMAL HISTORY OF
SABINAS - PIEDRAS NEGRAS BASIN (NORTHEASTERN MEXICO)**

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Abstract

The thermal and burial history of the Sabinas-Piedras Negras basin was studied by modelling using vitrinite reflectance values measured on 11 wells. Two heat flow scenarios led to calculating calibrations: a simple one and a complex one integrating a thermal anomaly following the maximal burial phase. The differences in the hydrocarbon generation curves due to these two scenarios have been discussed. It appears that the thermal evolution of organic matter is due mainly to the burial phase, whereas the thermal event causes a temporal shift in hydrocarbon generation.

This thermal event would not have induced a substantial secondary cracking phase, so that the evolution of most of the organic matter would have occurred when maximum burial was reached. Geodynamic considerations and, more importantly, a previous petrographic study would seem to favour the hypothesis of a thermal anomaly occurring after the burial phase.

Keywords: Thermal history, Hydrocarbon generation, 1D modelling, Sabinas - Piedras Negras Basin, Mexico.