

Integrated Approach for Basin Modelling of the Gaspé Belt (Québec, Canada)

M. Bêche¹, A. Jardin¹, M. Thibaut¹, D. Kirkwood², and D. Saucier³

¹IFP, Rueil-Malmaison, France; martin.beche@ifp.fr

²Geological Survey of Canada, GSC-Québec, Quebec, QC, Canada

³Université Laval, Quebec, QC, Canada

Abstract/Excerpt

The development of new prospects for oil and gas exploration will rely on our ability to detect reservoirs in complex settings. In compressive tectonics, a lot of difficulties are encountered for a reliable application of techniques like 3D seismic imaging, structural restoration and basin modelling. In this context, the determination of the accurate geometrical features remains a challenge, even at basin scale. The main obstacles obviously come from the building of a current and past structural model. For basin modelling, the numerical description of this model must be consistent with the simulator grid parameterization.

To develop new solutions and software, a methodological project based on real case studies is proposed (Jardin *et al.*, 2007). Our approach integrates geophysical and geological data and techniques for a reliable determination of complex structures before basin modelling application.

The Gaspé Belt example will illustrate the benefits of this approach for the limitation of geological ambiguities and for the building of a coherent model. This model will then be used to improve the 2D modelling of the HC generation timing performed to validate new prospective zones.