

Chronology Between Fracturing and Folding: An Issue in Reservoir Characterization?

Jean-Marc Daniel¹, **William Sassi**¹, **Martin Guiton**², and **Jean-Paul Callot**². (1) Institut Français du Pétrole, Rueil Malmaison, France, phone: 33 1 4752 7317, fax: 33 1 4752 7067, j-marc.daniel@ifp.fr, (2) Institut Français du Pétrole

During fractured reservoirs characterization, most of the available data concerning fractures constrain the geometry of fracture network (e.g. orientation and density). Only little information that is time consuming to acquire can be used to control the chronology between the traps formation/ diagenesis and fracturing. In this presentation, we used analogue outcrop studies to outline the main drawback of the routinely used fracture characterization workflow. The first deals with fracturing in the split mountain anticline (Utah) in eolian sandstones. The second concerns tight sands in Algeria and the last one is located in fractured carbonates in Iran. These three examples illustrate three different types of reservoirs where fractures can play a significant role on production. In these three cases a large part of the fractures were formed before folding. In this case, their impact on fluid flow is mainly related to the way they have been reactivated by folding and how they interact with diagenesis. Moreover, they strongly control the development of fractures related to folding. In such cases, the later cannot be predicted using simply fold attributes as this is so frequently assumed in reservoir characterization studies. The implications of these observations on fractured reservoir characterization workflows are discussed and practical solutions to deal with these issues are proposed as a conclusion.
