

**AAPG Annual Convention
Salt Lake City, Utah
May 11-14, 2003**

Isabelle Cojan, Simon Lopez, and Jacques Rivoirard, Ecole des Mines de Paris, 77305 Fontainebleau, France

Fluvial Process-Based Stochastic Model Outputs of the Almedina Outcrop (Triassic, Central Spain)

The Almedina Middle Triassic series (Central Spain) has been thoroughly studied and consist of fluvial dominated strata. A good appraisal of the alluvial architecture is made thanks to a sinuous cliff along which several measurements, sections and photographs have been carried out. Distinct levels are clearly identified with various channel morphologies or paleo-environmental settings. After a detailed study of this outcrop we estimate some paleo-hydraulic data from the geometric facies and grainsize characteristics of the sandstone bodies. The variability and spatial distribution of facies is also considered. Then, this fieldwork is used to condition a 3-D process-based and stochastic model of fluvial deposition at the reservoir scale. In this model, rules of floodplain evolution are derived from river mechanics and data describing dominant floodplain processes. The main advantage of this combined approach is to generate several independent and equiprobable realizations with genetic consistency (i.e. each deposit is genetically linked to its neighbor). Yet, high incertitude remains in the estimation of paleo-hydraulic information and our model may also reach its limits when the channel morphology changes abruptly. Nevertheless, in this context, the fact that the model accounts for spatial distribution of facies along with sedimentary processes enhances our interpretation of the outcrop, providing a better geological knowledge of the whole alluvial architecture.