AAPG International Conference
Barcelona, Spain
September 21-24, 2003

Oriol Oms[1], Eduard Remacha[2], Dinarès-Turell Jaume[3] (1) Universitat Autònoma de Barcelona, Bellaterra (Barcelona), Spain (2) Universitat Autònoma de Barcelona, 08193- Bellaterra (Barcelona), Spain (3) Istituto Nazionale di Geofisica e Vulcanología, Rome, Italy

South-Pyrenean Turbidite Analogs Chronology and Correlation between the Aínsa and Jaca Turbidite Systems. A Magnetostratigraphic Approach

The Eocene turbidites of the south-Pyrenean foreland basin have provided famous deep-water reservoir analogs for hydrocarbon exploration and development, facies and sequence-stratigraphy models and relationships between sedimentation and growing structures. Up to date, most of the oil company-oriented fieldwork in this area has been focused on the Lutetian sediments of the Aínsa basin systems, largely overlooking the western extension of time-equivalent units into the Jaca basin, which hosts most of the turbidite volume. The erosion over the Boltaña anticline hampers the direct correlation between the Aínsa basin (east) and Jaca basin (west). Thus, alternative chronological data is needed to improve actual poor-supported correlations. Despite the increasing interest in turbidites as hydrocarbon reservoirs, they have not been generally considered as interesting targets for magnetostratigraphic studies, which may be a very useful tool for global, basin-scale and local correlations. Our work provides a first long magnetostratigraphic section obtained in the Hecho Group turbidites that encompasses 2200 meters of continuous stratigraphic sucession, mostly located in the Aragón valley, north of Jaca. The magnetostratigraphic study shows that despite the presence of secondary iron-sulfides, magnetite carries a primary magnetization that defines several polarity intervals along section. After the biostratigraphic constraints, a correlation with the standard geomagnetic polarity time scale that provides a substantial improvement of the Hecho Group chronology is proposed. The new data allows a better and more robust correlation between the Jaca and the Aínsa basin systems.