

**AAPG Annual Meeting
March 10-13, 2002
Houston, Texas**

Pau Arbués¹, Marta Puig², Santiago Sánchez-Villanueva², Mariano Marzo², Josep Anton Muñoz² (1) University of Barcelona, Barcelona, Spain (2) University of Barcelona, Spain

Controls on the Variability of the Turbidite Systems in the Ainsa Slope Complex (South-Central Pyrenees, Spain)

The Ainsa slope complex developed during the lower and middle Eocene in a foredeep to piggy-back setting in south-central Pyrenees. It is preserved as a 40 Km long, 30 Km wide and 4000 m thick, mudstone-dominated clastic wedge, which includes coarser grained turbidite lithosomes. The latter correspond mostly to channel fills and associated overbank and splay deposits.

Our research in the Ainsa slope complex has produced a stratigraphic and structural dataset resolving from the basin fill to the reservoir scale. From the analysis of this dataset we offer a scheme of stratigraphic subdivision which covers the entire range of scales mentioned above plus tabulated parameters and related graphs for each of the elements in the scheme.

The basin fill is first divided into four major depositional cycles (2-5 m.y. each) which are bounded by unconformities and occur stepped several kilometers towards the foreland due to the propagation of the thrust front. Within a major depositional cycle, several turbidite systems occur which are bounded below by unconformities and above by a mudstone cap. From system to system, in a younging direction, there is an increase in N/G and reductions on stratigraphic thickness, amount of forelandwards migration of system axis, volume of bypass facies and maximum sediment caliber. These changes can all be explained by an overall decrease in gradient from base to top within a major depositional cycle and fit into a model characterized by progressively reduced rates of forelimb rotation along thrust-related frontal anticlines.