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**The Middle Eocene Ainsa Mixed Depositional System: a Model for Turbidite Deposition in Tectonically Mobile Slope Basins**

The Ainsa mixed system (i.e. a small turbidite system immediately seaward of and genetically associated with a fluvio-deltaic system, Mutti et al., in press) crops out in the central sector of the south-central Pyrenean foreland basin. This system was deposited in a piggy-back basin that formed after a major phase of thrust propagation and basin compartmentalization. It rests unconformably on the basinal turbidites of the Banaston Group and grades upward into a thick sequence of prodeltaic mudstones and deltaic sandstones. The Ainsa system consists of at least three coarse-grained units composed of north-west trending channelized and sheet sandstone bodies, each encased in basinwide mudstone-dominated units. Many lines of evidence suggest that the Ainsa system was ultimately fed by marginal fan-deltas from the south-east.

The results of detailed fieldwork, encompassing the entire outcrop belt, and core analysis from three wells permit reconstructing the depositional history of the Ainsa system and document severe syndepositional tectonic control. The sandstone bodies record uplift phases of the south-eastern sector of the Ainsa basin, i.e. the western limb of the growing Mediano anticline. These tectonic pulses (1) triggered resedimentation of marginal fan-deltas through sediment failures and hyperpycnal flows, (2) progressively shifted depocenters westward, and (3) controlled submarine topography and facies distribution patterns. Basinwide mudstone units bracketing the sandstones record periods of basin starvation, relative tectonic quiescence and delta construction.

This work emphasizes stratigraphic architecture and facies characteristics of the Ainsa system, discussing its importance as a potential analog for slope basins in divergent settings where salt tectonics plays an important role in the deposition of small and confined channel/lobe turbidite systems.