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The Banastón Channels and Their Related Overbank Deposits (Hecho Group, South-Pyrenean Eocene Foreland Basin, Spain). Diagnostic Features Compared with Those of the Depositional Elements

In the Hecho Group Eocene foredeep (south-central Pyrenees), the superb outcrops of the Banastón turbidite systems (Lutetian) provide excellent examples of the rarely described relationships between coarse-grained channel-fill units and their related fine-grained overbank deposits. The selected cases show a direct lateral correlation (continuous tracing) between both members. In this work, we will report a genetic approach to highlight the diagnostic features of the channel/overbank assemblage and to compare this assemblage with the time-equivalent sand-rich depositional elements, which extend further downcurrent and have been previously studied.

Within the cyclically organized channel-fill successions, the diagnostic facies features of sedimentary by-pass vs. depositional stages are highlighted, as well as the role of both hyperconcentrated-flow deposits and channel-lobe transition elements within channel-fill successions. The cyclically organized overbank deposits locally display coarse-grained thin beds laterally evolving into thicker cross-bedded sands. These beds are excellent markers that allow to link the overbank deposits with the base-of-slope channel-fill and channel-lobe transition elements. High-frequency cycles in the overbank deposits are capped by distinctive hemiturbidite-rich intervals developed during inactive phases of little or no sediment transference; these intervals are excellent markers for high-resolution correlations in the overbank deposits. High-resolution correlations across the channel-overbank assemblage allow to define stages of growth. Finally, the results are merged into a complete framework of characteristic features also including those reported in the downcurrent time-equivalent channel-lobe transition, sheetlike lobe and basin plain elements, with a review and update of the facies tracts.