HIGH RESOLUTION SEISMIC STRATIGRAPHY OF THE OMBRONE RIVER DELTA

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High resolution seismic stratigraphy of the Ombrone River deltaOn the Tyrrhenian Sea all the deltas are wave-dominated, because of the microtidal environment and the limited extent of subaerial basins. Among all the Tyrrhenian deltas, the Ombrone River delta is the less wave-dominated and stands out for its cuspidate form, well-developed mouth bar, presence of lagoons reclaimed on historical times.Trough a narrow-spaced network of seismic profiles, the detailed morphology and stratigraphy of the delta has been highlighted. It is possible to distinguish a delta front, whose edge is located at -18/-23m and slopes less than 0.5°. The prodelta slope develops down to the 100m water depth with a dip of 1-1.5°. Within the prodelta slope a 50 km2 area affected by sinsedimentary creep develops, creating a step-like morphology of the seafloor, with offset up to 3-4m.The above described morphology is the superficial expression of a wedge of sediment that is up to 50-60 m thick near the edge of the delta front and thins out to disappear some km before the shelf break. The delta rest on an erosional unconformity thought to be formed during last sea level lowstand and re-worked during the following sea level rise.Within the delta, a lower acoustically transparent unit is present, that can be interpreted as a condensed section formed during sea level rise and early highstand; above it an upper seismic unit with high-continuity high-amplitude reflectors is present, that represents the highstand progradation of the delta itself. The seismic character is the result of the winnowing of coarse sediment that are removed from the delta front during major meteomarine events; such sediments are interbedded with shelf clay that are present elsewhere in the shelf, draping the seafloor.