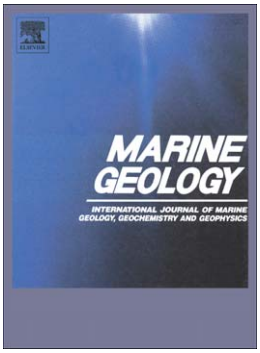

Compound Incised-valley Characterization by High-resolution Seismics in a Wave-Dominated Setting: Example of the Aude and Orb rivers, Languedoc inner shelf, Gulf of Lion, France

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PII: S0025-3227(15)00105-X
DOI: doi: 10.1016/j.margeo.2015.05.004
Reference: MARGO 5296

To appear in: *Marine Geology*

Received date: 30 August 2014
Revised date: 4 May 2015
Accepted date: 5 May 2015

Please cite this article as: Tesson, Michel, Posamentier, Henry, Gensous, Bernard, Compound Incised-valley Characterization by High-resolution Seismics in a Wave-Dominated Setting: Example of the Aude and Orb rivers, Languedoc inner shelf, Gulf of Lion, France, *Marine Geology* (2015), doi: 10.1016/j.margeo.2015.05.004

Compound Incised-valley Characterization by High-resolution Seismics in a Wave-Dominated Setting: Example of the Aude and Orb rivers, Languedoc inner shelf, Gulf of Lion, France.

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Keywords: incised-valley; wave dominated setting; high-resolution seismic stratigraphy; polycyclic record; aggrading and prograding filling; western Mediterranean Sea.

Abstract: A branch of a time-calibrated late Quaternary compound incised valley complex is investigated using high- and very-high-resolution seismic data. The incised valley system is confined on the inner shelf, and entrenched parallel to the shore in unconsolidated Pliocene deposits. The infilling of the incised valley system comprises three sigmoidal bodies dipping progressively downstream representing depositional sequences. The lowermost sequences are less well preserved at their downstream extremity and the whole system is both aggrading and prograding. Older Pleistocene/Late Quaternary sequences could be preserved under the coastal plain. Individual sequences are closely similar to the classic model of a microtidal incised valley fill. Nevertheless, the central estuary/bay basin muds are seen to interfinger locally with high-energy deposits that represent potential reservoirs. The properties (prograding and aggrading architecture, occurence of high energy deposits) and preservation of these compound incised valley fill deposits is attributed to general (glacio-eustatic cycles) and local (atmospheric and oceanic regime, proximity of the hinge line) conditions. Data acquisition strategy is a determining factor to interpret such systems.