Serravalian Sequence Stratigraphy and Depositional Architecture of the Northern Vienna Basin

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The northern Vienna Basin Serravallian depositional systems changed from basin plain to prodelta and later to delta slope environment during the Early Serravallian. In the Late Serravallian, the prograding lower delta plain setting was progressively substituted by environment of brackish tidal flats and coastal plains revealing toward overlaying strata character of swamps and marshes.

Sedimentary architecture of the Serravalllian basin fill allowed beside two individual 3rd order cycles of relative sea level changes, which can be more or less compared with the Haq's Mediterranean cycles TB 2.5 and TB 2.6, also identification of 4th order cycles: two Early Serravallian and other two Late Serravallian cycles. However, these cycles reveal different features. Hence we assume the Early Serravallian cycles to originate as a result of deltaic avulsion (development was forced by frequent shifts of distributaries), the Late Serravallian 4th order cycles developed due to the effect of relative sea level changes (regional shoreline shifts).

The Late Serravallian sedimentary record is composed of parasequence sets - high frequency cycles, which were caused by orbital forcing. These high frequency cycles with typical local character of sedimentary facies development can be more or less identified in the whole Vienna Basin (cycles were caused by eccentricity of Earth axis, with period of 100 ky).--

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