

## **Facies Distribution in a Shallow Platform Dominated by Lagoonal and Tidal Delta Processes (Upper Coniacian-Lower Santonian, Montsec Mountains, Northeast Spain)**

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The Montsec Mountains are a tectonically simple and gently dipping northwards unit, showing in its frontal part about 1000 meters of the Upper Cretaceous sediments, represented by shallow water mainly carbonate deposits.

The excellent outcrops oriented E-W and aligned continuously along 40 km, are being regarded as an ideal place to study the relationship between lithological characteristics of the rocks and paleontological content, in order to know the environmental facies distribution, to establish the mechanisms controlling the sedimentation and to obtain a depositional model.

During Upper Coniacian-Lower Santonian a shallow marine carbonate platform was developed in the Southern margin (passive margin) of the Pyrenean Basin. The sedimentary deposits present in this platform registered frequent and rapid facies changes and/or sedimentary gaps reflecting the influence of the eustatic sea level fluctuations and the tectonic activity in the active margin.

In this context, the Upper Coniacian-Lower Santonian shallow platform sediments represent a complete cycle of sedimentation, bounded by erosive surfaces, where two subcycles represented by bar-lagoon systems were identified and studied. Morphologically, both subcycles are constituted by one or several bars that separated the open sea from a lagoon. In this protected platform tidal delta and washover deposits have been identified.

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