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## **Mixed carbonate and siliciclastic slope deposits, SE Spain**

Exposures of the Lower Miocene in the Costa Blanca region of SE Spain show an entire shelf to basin transition from shoals to basin turbidites in less than 15 km. The tectonic regime was transitional into a foreland basin. Preliminary field observations from mapping and measured sections show a shelf without a distinct break in slope affected by two small-scale pulses within an overall deepening in the Aquitanian and Lower Burdigalian. A significant unconformity marks the Oligocene/Miocene boundary and the initiation of the tectonism. The unconformity had topographic relief with more erosion basinward. Breccias derived from the underlying Oligocene limestones mixed with glauconitic sandstones overlapped the surface. An initial deepening followed, represented by marlstone in the basinward sections and channels thickening shoreward. Subsequently, another deepening event is shown by fine-grained carbonate siltstones and turbidites that exhibit slumps and soft-sediment deformation. The early Burdigalian is represented by a grainstone shoal complex with prograding clinofolds that grades laterally to a prominent sandstone channel complex in the basin. The entire cross section deepens in the late Burdigalian as deep-water turbidites covered the entire region.

The strata are composed of mixed carbonate and siliciclastic lithologies, but the degree of mixing lessens from shelf to basin. Well-mixed carbonate and siliciclastic grains characterize the platform; more segregated carbonate- and siliciclastic-rich beds are found in the basin. A depositional model applicable to this and other mixed systems is proposed, based on the nature of the lithologic and geometric relations between mixed, carbonate, and clastic units.