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Morphosedimentary evolution of a beach spit system (Punta Rasa, Argentina)

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Spits constitute sand-rich, elongated barriers extending laterally through the construction of progradational beach-ridges. Spits are constructed by angular wave approach and longshore currents, which results in the transport of sediment to the spit end and hence their growth. If sediment supply isn't enough cannibalization can occur causing a narrowing and further breaching of the spit. One of the main controlling factors of sediment supply to spits are waves and particularly high energy events such as storms.

The spit of Punta Rasa, located in the northeast coast of the Buenos Aires province, represents the coastal outer extreme of the Río de La Plata estuary. Towards the north the spit is bordered by the southern extreme of the Samborombón Bay, whereas, to the south, the spit extents along the Oriental Barrier which ends towards the locality of Punta Medanos. The wave-built deposits interact with marshes and tidal channels transgressing the shoreline from the north. Besides, the coastal plain exhibits the interaction between beach-ridge systems, dune fields and sandy beaches.

In this work, coastline changes and recent evolution of the system of spits in Punta Rasa are analyzed using sedimentalogical profiles and aerial photographs. Results show an evolution marked by periods of erosion and significant changes in its morphology. Firther a general trend (since approx. 500 years) of the spit to curve towards the internal part of Bay is also found which could indicate a deficit in the contribution of sediment among with increasing mean sea level.