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# Sedimentary features and shallow-water contourites controlled by dense shelf waters in the South Adriatic Sea

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The Adriatic Sea is one of the key areas in the Mediterranean where dense shelf waters form and act as bottom currents along the continental margins. The dense shelf waters form in the northernmost part of the Adriatic Sea through winter cooling and flow southward driven by their excess density, reaching the southwestern part of the basin. The dense shelf waters are best known for impacting and shaping the South Adriatic slope and basin through a process of cascading. Notwithstanding, also the southwestern Adriatic shelf, from 50-200 m, is characterized by the presence of a large variety of macro-scale (hundreds of meters to few kilometres wide) sedimentary features, both erosional, such as moats, furrows, giant comet marks, large flute-shaped scours, and depositional, including very large dunes and shallow-water-contourites. In particular, the latter have been overlooked along continental shelves, but thanks to a new generation of high-frequency multibeam systems, more recently, they have been increasingly documented in these shallow-water settings. Here, bedforms may be related to a variety of different processes, other than the circulation of dense waters.

For this purpose, we collected new high-resolution multibeam and seismic data to determine the nature and the 3D shape of these sedimentary bodies and ground-truthed the bedforms for their grain size and mineralogical composition. Both erosional and depositional features show a NW-SE orientation compatible with a water mass flowing parallel to the coast. This study shows that part of the dense shelf waters remain trapped on the shelf flowing as contour-parallel bottom currents and forming several bedforms and a hundred-km-long shallow-water contourite system.