

## INTERACTION FLOW BATHYMETRY AT TIDAL SCALE IN THE MAIN SILL OF THE STRAIT OF GIBRALTAR

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**Abstract:** Data collected in the north and south channels of the main sill of the Strait of Gibraltar (Camarinal sill) are used to investigate processes connected to the internal hydraulics of the exchange through the Strait at tidal frequencies. Observations strongly suggest the setting up of hydraulic jumps at both the western and eastern flank of the sill, the latter associated with the reversal of the Mediterranean undercurrent during spring tides. The northern site is more sensitive to processes triggered by the formation and release of the jump formed east of the sill during intense enough ebb tide cycles, which is thus better traced at this location; the southern site detects more neatly the fluctuations and footprints associated with the hydraulic jump regularly formed to the west of the sill during flood tides. A detailed inspection of the high resolution bathymetry of the area reveals the existence of two enclosed depressions at either side of the sill, almost certainly carved by the bottom flow over the millennia, whose shape and morphology are suggestive of this spatial differentiation.

**Key words:** Internal waves, Hydraulic jumps, Camarinal sill, Flow-induced carved depressions

**Acknowledgments:** Field experiment was carried out onboard the research vessel “Angeles Alvariño” from the Spanish Institute of Oceanography, whose crew we thank for their help and well-done work during mooring deployments and recovery.

### References:

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