



## **An intermittent coastal current generated by buoyancy and wind forcing**

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The current system in the northern part of the west Iberian shelf is not yet well understood and existing models fail to describe it adequately, especially in extreme conditions. It is hypothesised in this study that river runoff, though not very high, is likely to induce a buoyancy driven coastal current capable of promoting an effective northward transport of water, sediments and biological material from both shelf and estuarine sources. In order to evaluate the spatial coherence of the current field, as well as the estuary-ocean interaction, drifters were deployed inside the Douro estuary and their tracks monitored until their signals were lost. The results obtained allow us to conclude that the local surface current pattern derived from the drifters' tracks is compatible with the information obtained from an ADCP moored at the inner shelf in neighbouring waters.