

A high-resolution modeling study of the Western Iberian Margin mean and seasonal upper ocean
circulation

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The mean seasonal hydrology and circulation of the Western Iberian Margin (WIM) are studied by means of a high-resolution configuration of the Regional Oceanic Modeling System (ROMS). A comparison of 5-year model averages for January and July with climatological datasets shows a general good agreement in the reproduction of the mean water mass properties and hydrological distribution. The seasonal circulation patterns are also studied, with evidence a prevailing alongshore poleward flow throughout the year, co-existing in summer with equatorward flow associated with coastal upwelling. As a conceptual essay with the purpose of assessing the Mediterranean Water flow influence on the WIM mean circulation, a second model configuration is set up, where the Mediterranean outflow into the study domain is removed. We find that there is an attenuation of the mesoscale field, but the slope poleward flow remains as a mean dynamical feature closer to the upper slope.