
ASSESSING MACRO & MESOSCALE TRANSPORT OF MICROPLASTIC AT OPEN OCEAN IN NORTH ATLANTIC OCEAN AT DIFFERENT DEPTHS

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Abstract

The Canary Islands is a region identified as a hot spot of marine plastic debris, with the arrival of a significant amount of meso and microplastics to the coast. An important variability in microplastic concentration has been observed along the eight islands and the main factors that might explain this variability are still under study. This high variability has been observed between 0-1200 meters depth in open ocean near the Archipelago, where microplastic (MPs) concentration varies significantly between different seasons, locations and depths. Most of MPs pollution arrives from the open ocean through the North Atlantic subtropical gyre. Beaches facing the main current (oriented to north or northeast) show higher debris concentration but MPs temporal distribution do not present any seasonal pattern. MPs transport and distribution are related to ocean dynamics not only at the sea surface but also along the whole water column. The main objectives of this work are: (i) to address the relationship of MPs arrival at the Canary Islands studying the transport of these particles and modelling their trajectories on their way from the open ocean to the coast. (ii) to evaluate the MPs mesoscale accumulation and transport of two mesoscale eddies in the region, an anticyclonic eddy (April 21) and a cyclonic eddy (February 22) at different depths. Generally, fragments, fibres, lines, films and microbeads present in each sample were identified and quantified. Below the sea surface, all MPs found were smaller than 1 mm (most of them

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