# LAGRANGIAN TRAJECTORIES TO ASSESS MARINE PLASTIC POLLUTION DISTRIBUTION IN THE CANARY ISLANDS

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**Abstract:** The increasing presence of plastics in the ocean is a harmful problem for marine ecosystems and the socio-economic sector. A recurrent type of debris gathered in waters of the Canary Islands are the identification tags employed at lobster traps deployed at the north-eastern coast of North America. In the past decade to the present, these debris have been routinely collected and classified by the EOMAR group (MICROTROFIC Project) through coastal sampling focused on the eastern part of the Canary archipelago. In order to address this problem, a further understanding of the distribution and dynamics of these debris in the ocean is demanding. In this work, a pre-existing tool in Matlab (Andrew Poje, 2008) has been adapted to produce Lagrangian trajectories based on Marine Copernicus surface current velocity data (GLORYS12V1). The main goal is to assess the trajectories that floating particles might follow in the North Atlantic subtropical gyre when released over a grid in the north-eastern coast of North America. Our results provide a quantitative basis about the link between the North American north-eastern coast and the Canary Islands, where the presence of these and other debris is of increasing concern.

**Key words:** Plastics, Lagrangian trajectories, Distribution, Large-scale Circulation, North Atlantic Subtropical Gyre.

## References:

Andrew Poje. (2008). *Matlab Scripts for constructing Lagrangian Trajectories in HOPS*. https://www.math.csi.cuny.edu/~poje/HOPS/