



CONSIGLIO NAZIONALE DELLE RICERCHE
ISTITUTO DI SCIENZE MARINE

CICLO DI SEMINARI

[ONLINE LINK](#)

Monday, 9th June 2025 - 2:30 pm (CEST)

Chasing water:

The oceanography of the transport of floating marine debris

Speaker: Erik Van Sebille

Utrecht University



Abstract - Ocean currents transport material like plastic over scales from coastal to global. The most natural way to study these transport pathways and the connections between the coast and the ocean is by using trajectories, computed by simulating virtual Lagrangian particles in fine-resolution ocean models.

In this seminar, I will give an overview of some recent work with Lagrangian particle analysis. I will introduce our open-source oceanparcels.org framework and show how we use this framework to simulate the transport of micro- and macroplastic, in order to map the distribution of plastic on scales of kilometers. I will discuss how we develop new parameterizations for subgrid-scale transport processes of floating plastic items; and compare these parameterizations to field and lab measurements. I will particularly focus on coastal processes and how they control the beaching, resuspension and fragmentation of macroplastic items.