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# The streaming of plastic in the Mediterranean Sea

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## Abstract

Plastic debris is a ubiquitous pollutant on the sea surface. To date, substantial research efforts focused on the detection of plastic accumulation zones. Here, a different paradigm is proposed: looking for crossroad regions through which large amounts of plastics debris flow. This approach is applied to the Mediterranean Sea, massively polluted but lacking in zones of high plastic concentration. The most extensive dataset of plastic measurements in this region to date is combined with an advanced numerical plastic-tracking model. Around 20% of Mediterranean plastic debris released every year passed through about 1% of the basin surface. The most important crossroads intercepted plastic debris from multiple sources, which had often traveled long distances. The detection of these spots could foster understanding of plastic transport and help mitigation strategies. Moreover, the general applicability and the soundness of the crossroad approach can promote its application to the study of other pollutants.

**Keywords:** Lagrangian modeling, plastic crossroads, TrackMPD, plastic crossroadness, Mediterranean Sea

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