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## Validation of marine plastic litter distribution models on the North-Western Mediterranean

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Marine plastic litter is one of the most significant signal of the impact of human activities on the marine environment. Therefore, improved methods and models are needed to better understand the distribution pattern of plastics (mainly microplastics) on the sea surface, along the water column, and on the seabed. So far, most plastics sampling campaigns have collected sea surface data, but these data were very scattered and mostly unrepresentative of the seasonal variability of their distribution. A comprehensive overview of the presence of plastic litter in marine environment must rely on models having the skill to better represent spatial patterns, interactions with marine ecosystems, and even predict the possible presence of plastic clusters at a specific time and position. Numerous studies adopted models of plastic transport which consider some sources of pollution (rivers, ports, ship routes) to determine plastic distribution in the open sea due to meteorological forcing. However, most of these models have not been validated against field data.

In this presentation we show the results of a validation procedure of the modelled marine debris distributions expected in the North-Western Mediterranean between May and September 2019, through the comparison with field observations on the sea surface from campaigns carried out within the Interreg Med project Plastic Busters MPA. Marine debris observations show a significant variability, especially along the coasts, highlighting the need to employ a hydrodynamic model with a resolution much higher than that of basin-scale models. In the comparison between the observed and modelled surface plastic concentrations, the effect of model resolution will be specifically addressed.