

Wavemill: a new mission for high-resolution mapping of total ocean surface current vectors

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ABSTRACT:

Synoptic maps of total ocean surface currents from space are needed to improve parameterisations of oceanic sub-mesoscale dynamics and represent their impact on global ocean circulation, air-sea exchanges and the marine ecosystem. Wavemill is a hybrid interferometric SAR instrument that seeks to deliver high-resolution high-accuracy maps of ocean surface current vectors. It measures the total ocean surface current, including ageostrophic components, in one single-pass. Other secondary products include ocean wind vectors, swell, and some estimate of ocean surface topography. Proposed as an ESA Earth Explorer, the mission's prime objective is to deliver ocean surface current vector maps over two 100 km swaths with a resolution of 1 km or finer.

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