



WAVERYSV2: a high-resolution global wave reanalysis covering the historical period from 1980 to the present day

As part of the Copernicus Marine Service (CMEMS), WAVERYSV1 was the first global wave reanalysis to consider ocean currents and directional wave spectrum assimilation. These features enable it to perform particularly well in areas dominated by strong currents or long swells (see Law-Chune et al., 2021). WAVERYSV version 2 is planned for June 2025. It shares similarities with the previous version, such as the same physics and the same atmospheric and surface current forcing. However, it proposes an upgrade in resolution, with $1/10^\circ$ instead of $1/5^\circ$ in space, and 36 members instead of 24 in directions. New reprocessed data from CMEMS WAVE-TAC (altimeters and scatterometer wave spectra) will be assimilated for more reliable data constraint. WAVERYSV2 will also benefit from wave-ice interactions, such as under-ice wave dissipation, with daily ice thickness and ice cover provided by the future CMEMS $1/12^\circ$ global ocean reanalysis GLORYS. WAVERYSV2 products consist of classical integrated wave parameters provided on a $1/12^\circ$ regular grid with an output frequency of 3 hours. New variables such as wave maxima and monthly means will also be delivered, as well as wave-to-ocean coupling parameters. This product will also be extended in time each month with a one-month delay thanks to an automatic operational production called “interim production”. This presentation will cover the description of the system, as well as the work in progress for the development, calibration, and validation of this new global wave reanalysis.

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