



## **SMOC: a new global surface current product containing the effect of the ocean general circulation, waves and tides**

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Following the steps of what is being done for various current products derived from the observations, SMOC (Surface and Merged Ocean Currents) is a composite surface current product that combines data from the CMEMS modeling systems to approach the net velocity felt by a body at sea surface. In SMOC, the total current is obtained from the simple addition of contributions from the oceanic general circulation, tides and waves. In the presence of strong wind sea, the wave-induced Stokes current can indeed contribute half of the surface drift. On the shelf, tide is another major mechanism controlling the exchanges between the coast and the open sea. We present here the characteristics of the product as well as the validation methods used. These are based on comparison with drifting buoys in Eulerian and Lagrangian mode, but also on comparison with in-situ current measurement and coastal radar data. SMOC is distributed on the global domain, with a horizontal resolution of  $1/12^\circ$  and with an hourly frequency. All horizontal components and their sum are delivered, so that the user can select and focus on each component individually. Three independant systems are used to compute SMOC products which are the CMEMS global high resolution ( $1/12^\circ$ ) real time forecasting system, the CMEMS global waves ( $1/10^\circ$ ) forecasting system and the FES tidal model . SMOC data are computed daily, with one day of hindcats for the previous day, and five days of forecast ahead from the date of production.