Monitoring ocean extremes with satellite data from EUMETSAT

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Ocean extremes can take many forms. From event scale phenomena such as extreme waves, to deviations from climatic norms in the form of marine heatwaves. Extremes can even be observed in ocean biology, as high biomass phytoplankton blooms. The potential for loss of life and livelihood from these events is high, motivating for regular operational monitoring. The modern array of operational Earth Observation satellites, offer a way to observe these phenomena at suitable spatial and temporal scales, supporting prediction, decision making, and mitigation.

Various data products are available from EUMETSAT mandatory missions, the Ocean and Sea Ice Satellite Applications Facility, and via missions operated for the Copernicus programme to support the study of ocean extremes and their impacts. Here we present an overview of available data and how to access and work with it. We provide some example case studies showing data applied in regions where ocean extremes present a particular interest. Links will be provided to worked examples of the case studies, available as Python-based Jupyter Notebooks.

For users who are interested in these data sources, we will also provide information on additional user support and further training opportunities that will be offered through the EUMETSAT Copernicus Marine Training Service.