Remotely sensed oceanic properties by multiple hyperspectral satellite sensors
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Backscattered satellite spectra can be exploited for insights on ocean constituents and the underwater light field. The amount of light in the ocean is important for estimating heat budget and primary productivity. The latter also requires knowledge on biomass of phytoplankton. Grouping of phytoplankton according to their function in biogeochemical cycling and distinguishing these phytoplankton functional types (PFTs) via their optical signature in satellite spectra, enhances understanding of biogeochemical cycles on a global scale. The amount of light in the ocean and the chlorophyll-a concentration of different key PFTs have been derived from backscattered radiances measured by SCIAMACHY. Here, we present refined approaches to determine these oceanic quantities that are also applied to other hyperspectral sensors such as GOME-2 and OMI. The intercomparison of the hyperspectral sensor's oceanic data products gives an idea about the robustness of the methods. Possible merging of the data sets from different sensors to establish long data time series is discussed.