**Consistency analysis of ocean color products at high latitudes**

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There is a growing interest in the observation of the Arctic Ocean by remote sensing, because this rapidly changing region plays a crucial role in the context of climate change. However, there are several challenges to the observation of ocean color from low earth orbit radiometers in this region: in particular, a lower sun elevation further reduces the relative contribution of the ocean reflectance to the top of atmosphere signal, thus increasing the uncertainties on the estimated parameters. We propose a method to assess how the ocean color products evolve when the optical path length through the atmosphere (the air mass) increases. This generic method uses satellite observation of the Arctic Ocean; no in-situ data are required. We present results of this method applied to MERIS, MODIS and SeaWiFS, and compare different atmospheric correction algorithms: the Gordon & Wang algorithm, and the Polymer algorithm.

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