



Salinity, Temperature and Polarization Effects for Simulated Radiances in a Case One Waters Atmosphere Ocean System

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Salinity, temperature and polarization can have non negligible effects on top of atmosphere and water leaving radiance's for case one waters. Reasons for this are variations of the refractive index, the bulk scattering coefficient and the sea water absorption. We analyze the spectral dependency of the effects for the channels of the satellite instruments MERIS and OLCI, and discuss the implications for ocean color retrieval. The bio optical model is based on an optimization scheme and is using Mie theory to reproduce measurement of chlorophyll optical properties and obtaining physical phase matrices. We discuss the error if polarization is neglected in the radiative transfer. It depends strongly on direction and wavelength and can reach values of eight percent.