Bidirectional reflectance function for oceanic waters with varying chlorophyll concentrations: Measurements versus predictions

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ABSTRACT: The bidirectional reflectance of the ocean is an important parameter in ocean color remote sensing. Model predictions for case-1 waters were compared with measurements over a large range of chlorophyll concentrations (0.1-10 mg m^{-3} Chl, where Chl represents the sum of chlorophyll *a* and phaeophytin *a*), but with restricted solar zenith angles. We used the measured chlorophyll concentration and a model to predict the shape of the upwelling spectral radiance distribution. We found that the model predicted the radiance in the view direction, normalized by the nadir radiance, to within 7%. We also found that $Q(E_u/L_u)$ was predicted within 7%.