Tuesday, October 9
Poster Session 2
10:30–12:30

Poster 237

PLANKTON MODELS FOR ANALYSES OF UNDERWATER LIGHT AND OF OCEAN COLOR REMOTE SENSING

Plankton exhibit a wide range of size distributions, shapes, and internal structures. However most studies that focus on light scattering by plankton particles assume that these particle have spherical shapes and that they are completely homogeneous. It is known that such assumptions lead to discrepancies in the amount of light scattered backwards. Furthermore, the assumption of spherical shapes leads to disagreement with ocean depth profiles of lidar depolarization ratios. To investigate the relative importance of plankton shapes and internal structures in RT and retrieval studies of underwater light scattering, computations were initialized to compare the scattering matrices for 4 classes of particles: (I) homogeneous and spherical; (II) homogeneous and non-spherical; (III) inhomogeneous and spherical; and (IV) inhomogeneous and non-spherical. We used existing data on plankton scattering functions, degree of linear polarization, lidar depolarization ratios, and aspect ratios to constrain shape distributions and internal structures.

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