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### Abstract

#### CONTINUOUS ABSORPTION MEASUREMENTS OF SEAWATER CONSTITUENTS – AN INTEGRATING CAVITY APPROACH

Measurement of light absorption in seawater is an important issue in biological oceanography, because it can provide information about the different light absorbing constituents therein. In the visible spectrum, this is mainly chromophoric dissolved organic matter (CDOM), non-living particular matter, and phytoplankton with its various pigments. Often, absorption measurements of natural samples are complicated by low concentration of absorbing material in the water and light scattering on particles. These problems can be overcome by systems based on integrating cavities like the point-source integrating cavity absorption meter (PSICAM). However, a measurement frequency high enough to reveal fronts and trends in the absorption properties of seawater constituents requires high effort when operating such a system manually. In order to combine the advantages of the integrating cavity approach with the high resolution and convenience of continuous measurements, we adapted a PSICAM for flow-through operation (ft-PSICAM). Setup, function and first results from field tests are presented and compared to data obtained by a manually operated PSICAM. Furthermore, the use of absorption coefficients for the determination of chlorophyll-a and total suspended matter is demonstrated.

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