

OCEAN OPTICS XXIV

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Wednesday, October 10

Poster Session 3

16:00–18:00

Poster 167

UNDERWATER LIGHT AVAILABILITY ASSESSMENT IN THE VAIGAT-DISKO BAY, WEST GREENLAND: EFFECTS OF GLACIAL MELT WATER DISCHARGE

Global warming has led to increased supply of meltwater from glaciers to coastal systems such as fjords and coastal embayments along the coast of Greenland. Studies of the impact of increased glacial outflow on the underwater light field are however very limited. Arctic marine ecosystems are greatly impacted by the accelerated glacial melting. With an aim to understand the effects of meltwater runoff on the hydrography and bio-optical variability, profiles (CTD, ac-s, HyperPro II) were measured in the Vaigat and Disko Bay area located on the west coast of Greenland in summer 2017. The Vaigat-Disko Bay receives sediment rich glacial meltwater input from the Iluliissat Glacier. Declared as a UNESCO world heritage site, it is one of the fastest and most active glaciers in the world and annually calves about 10% of all Greenland calving ice. The Vaigat and Disko Bay were spatially sampled so as to provide high resolution mapping of the underwater light availability. Inherent optical properties (IOPs) and apparent optical properties (AOPs) were derived for the meltwater-influenced bay. From the acquired dataset a spatial assessment of underwater light availability is performed indicating areas of maximum light penetration and diminuation.

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