

Tuesday, October 9

Poster Session 2

10:30–12:30

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## Poster 186

### OPTICAL PROPERTIES OF DARK WATER EVENTS IN PUERTO RICAN OLIGOTROPHIC ENVIRONMENTS

Dark water events (DWE) are commonly found in coastal areas associated with wetlands or river outfalls, rich in organic humic matter. In Puerto Rico (PR), DWE can be found along the insular shelf and beyond in oligotrophic waters. These areas are usually associated to extensive coral reefs and seagrass habitats. Satellite imagery from Sentinel-3 (S3) was used to detect and assess the fate of these water masses. Field water samples in southwestern PR were analyzed for total suspended sediments, Colored Dissolved Organic Matter (CDOM), dissolved organic carbon and chlorophyll a. Field optical data were collected with a profiling Satlantic HyperPro, a GER-1500 field spectroradiometer, and a Hydroscat-6 backscattering meter. Dark water events were identified at nine S3 images in 2017-2018. Satellite data products were extracted inside and outside of these DWE while field data were used to validate ocean color remote sensing products. A dark water index (DWI) was used to discriminate these events from the surrounding clear oligotrophic waters. Preliminary data suggests an index of 7 or less (mean = 5) define DWE, while values above 7 (mean = 12.3) are associated with clear waters. The S3 ADG443\_NN satellite product value inside the DWE (mean = 0.027) is double the values of clear waters. Reflectance values of S3 Band 1 (400 nm) outside the DWE is two times (mean = 0.025) the values inside the DWE. These data suggest that the highest contribution to the DWE optical signal is by CDOM. Field data will be used to validate this.

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