

OCEAN OPTICS XXIV

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<https://oceanopticsconference.org>

Wednesday, October 10

Poster Session 3

16:00–18:00

Poster 250

HYPERSPECTRAL LIGHT AVAILABILITY ACROSS AND ALONG THE PACIFIC OCEAN – FROM CHILE TO NEW ZEALAND AND UP TO ALASKA

The characterization of the underwater light field by in-situ observations is essential to develop and improve ocean color remote sensing algorithms as well as realistic aquatic light model parameterizations. In-situ measurements from profiling systems are commonly utilized, however only a few datasets exist covering the Pacific Ocean, especially the southern Pacific and its gyre system. Here, surface waters are known to be the most oligotrophic and optically clearest in the global ocean. The underwater light field was observed on three cruises with R/V Sonne (2015 – 2017) by using a hyperspectral free-falling optical profiler covering the visible spectrum. We sampled waters from Antofagasta (Chile) to Wellington (New Zealand) as well as waters around New Zealand down to 55° South and up to Dutch Harbour, Alaska (USA). The data along the meridional and zonal transects across the Pacific Ocean cover different water masses with a broad range of influencing parameters: from ultra-clear waters with deep chlorophyll maxima at 200 m depth, to temperate as well as cold near-shore and coastal waters with low light penetration depths and deep chlorophyll maxima around 30 m. Furthermore, the underwater light field from 2016 and 2017 will be combined with above water hyperspectral remote sensing reflectance measurements from an underway installation onboard the vessel.

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