

NASA EXPORTS North Pacific – FRR & PAR
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Introduction

This dataset contains Fast Repetition Rate (FRR) fluorescence data, incident Photosynthetically active radiation (PAR) data, and sea surface temperature data for NASA EXPORTS north pacific field campaign.

FRR and SST data were collected continuously during the cruise using sample water drawn from the ship's flow through seawater system.

PAR data reported here were collected with a Licor cosine collector positioned on the top rail of the port side aerosol van on the upper forward weather deck of the Atlantis, providing measurements relatively free of any ship shading. PAR data are reported in units of $\mu\text{M quanta/cm}^2/\text{s}$.

The FRR was characterized by the manufacturer, Zbignew Kolber. The Licor sensor was calibrated by Licor shortly before the cruise. Data submitted to SeaBASS from the FRR include initial fluorescence (F_0), Maximum Fluorescence (F_m), Variable Fluorescence (F_v/F_m), and the functional cross section of photosystem II (ΣPSII). These properties were derived from the single turnover flash sequence from the FRR. 16 individual flash sequence results were averaged into each reported value. Seawater sample analyzed by the FRR was exposed to darkness from the time the water was drawn into the ship to the time of measurement (estimated as a few minutes).