



## **Shipboard Measurements of Aerosol Optical Thickness in Marine Environments**

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Developed by the Brookhaven National Laboratory, the Portable Radiation Package (PRP) is comprised of an Eppley pyrgeometer, pyranometer, and shadowband radiometer that measure global shortwave as well as direct normal and diffuse radiation in six wavebands (410, 500, 615, 680, 870, and 940nm). Pitch and roll sensors and GPS information allow for determination of the position of the shadowband in three dimensions with regard to the sun. Aerosol optical thickness is calculated for each of the narrowband channels in clear sky conditions for validation of satellite aerosol retrievals. Since its first shipboard deployment in 1999, the PRP has participated in research projects which have sampled atmospheres and radiation over the global ocean, providing a unique AOT database. In 2001, a PRP was installed on the Explorer of the Seas and operated in a near-continuous and autonomous fashion for 2 years. Presenting data from several cruises, including those from pristine (summertime Arctic, central Pacific) to aerosol-burdened (Red Sea and Gulf of Aden) as well as part of the long Explorer time series, we provide a first look at aerosol distribution in marine environments from PRP and initial comparisons with remotely-sensed retrievals of AOD.