



## **Rainfall Effects on the Kuroshio Current East of Taiwan**

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Changes of sea surface salinity (SSS) in the open oceans are related to precipitation and evaporation. SSS has been an indicator of water cycle. It may be related to the global change. The Kuroshio Current, a western boundary current originating from the North Equatorial Current, transfers warm and higher salinity to higher latitudes. It flows northward along the east coasts of Luzon Island and Taiwan Island to Japan. In this study, effects of heavy rainfall on the Kuroshio surface salinity east of Taiwan are investigated. Sea surface salinity (SSS) data taken by conductivity temperature depth (CTD) sensor on R/V Ocean Researcher I cruises, conductivity sensor on eight glider cruises, and Aquarius satellite data are used in this study. The rain rate data derived from the Tropical Rainfall Measuring Mission (TRMM) Microwave Imager (TMI) are also employed. A glider is a kind of autonomous underwater vehicle, which uses small changes in its buoyancy in conjunction with wings to convert vertical motion to horizontal in the underwater without requiring input from an operator. It can take sensors to measure salinity, temperature, and pressure. The TRMM/TMI data from remote sensing system are daily and are mapped to 0.25-degree grid. The results show a good correlation between the rain rate and SSS with a correlation coefficient of 0.86. The rainfall causes SSS of the Kuroshio surface water drops 0.176 PSU per 1 mm/hr rain rate.