



DE LA RECHERCHE SCIENTIFIQUE

1.Motivations

1m salinity measurements from a TAO mooring in the western equatorial Pacific indicated a very different nighttime and day-time response to tropical precipitation, inducing a daily cycle of weaker afternoon surface salinity and larger early morning salinity, despite maximum late night rainfall (Cronin and McPhaden, 1999)

The SMOS satellite mission measures L-band radiation from the surface both at dawn and night-fall. A daily SSS cycle could result in differences between the two passes in these regions of excess tropical precipitation and low salinity.

Also, one can wonder what the actual surface salinity is in the top first cm that contributes to surface band-L microwave emissivity compared to deeper salinity as measured on tropical moorings (1m at least from the surface) or typical ARGO floats (5 to 10 m from the surface , as evidence of vertical S gradients related to rainfall have already been found in this region (Hénocq et al., 2009

2.Data & methods

The Gloscal project was set up to provide cal-val data for the SMOS mission, and included in particular deployment of drifters equipped with temperature and salinity sensors in tropical areas prone to excess precipitation (ITCZ and western tropical Atlantic, equatorial Indian Ocean, and south-western tropical Pacific).

SVP-BS drifters were deployed with Seabird SBE47 conductivity cells near 50 cm and associated temperature measurements (the actual depth of sensors has varied between different drifter makes).

In a small number of cases, small surplas floats measuring C and T near 15 cm (ASD conductive cells) were tethered with a thin 8m-long floating line to the SVP-BS drifter in order to have some inkling on near surface salinity gradients.

Rainfall (and wind) from AMSRE, TMI and SSMI microwave radiometers were collocated with the salinity time series. The data foot-print of the different satellites varies, but is at the smallest 25 km

Events of sudden salinity decrease are expected to be indicative of rainfall. They will be identified on S time series, and investigated.

