

# **Agulhas System Mini-Symposium**

## **Abstract**

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**A study of the dynamic variability of the Agulhas Retroflexion using Argo float technology**

The inter-ocean exchange of salt and heat around South Africa is thought to have great importance on the global meridional overturning circulation (Richardson, 2007). Using Argo float technology has revolutionized the coverage of the oceans down to depths of 2000 meters, and as such, can be used to study this salt and heat exchange. The purpose of this study is to compare two sets of Argo floats to gain knowledge on the Agulhas Current Retroflexion and its dynamic variability.

Two SAEON ARVOR floats were deployed in 2009 at the retroflexion region, the one grounded at Marion Island while the other float was caught in the Cape Basin and Agulhas Return Current, and is still active. The three SOLO II floats deployed in 2013, and their trajectories became involved in different features; the Agulhas Return Current moving eastwards away from Africa, the recirculation around the South West Indian Ocean sub-gyre and southwards towards the Southern Ocean. The three SOLO II floats were more energetic than the SAEON floats which were sedate and the aim is to find out why this was the case.

The Argo float profiles and trajectories will be studied, along with remote sensing data and modeling climatology's. The two sets of floats trajectories were both circulating in the Agulhas Retroflexion region during 2013 and this period is of most importance to determining the dynamics of the Agulhas Retroflexion.