The Pathway and Characteristics of an Agulhas Ring

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Agulhas rings are warm core anti-cyclonic anomalies that may cross the Cape Basin and may even travel as far as the Brazil Current. Agulhas Rings may follow one of three pathways into the South Atlantic. During the SANAE 54 voyage along the Good Hope line a warm core anomaly was crossed between 34 °S to 39 °S and 12 °E to 16 °E on the 6th of December 2014. The purpose of this study is to identify the anomaly and its characteristics as well as its pathway. According to the altimeter and SST images the anomaly was shed from the Agulhas retroflection on the 10th of October 2014. The data collected during the transect showed that the 10 °C isotherm was forced down from 200m to 800m. The S-ADCP data showed that the Agulhas Ring had a zonal transport of 0.9 m.s^{-1} at the northern edge.. This Agulhas Ring followed the central route over the Erica Seamount and through the Cape basin and on the 25th of June 2015 it reached the Walvis Ridge. An Argo float was deployed into the core during the transect and has been trapped in the Agulhas Ring ever since. The cross section of the vertical profiles from this Argo Float clearly shows the doming of the Isotherms. The 10 °C isotherm from this section was between 700 to 750 m except for five profiles when the float was outside the Agulhas Ring, the 10 °C isotherm was at 500 m.