SECTION 1: CRUISE SUMMARY

PRE-WOCE ISS01, RRS DISCOVERY CRUISE 165A
MOORED CURRENT METER RECOVERY FROM THE AGULHAS CURRENT AND RETROFLEXION REGION

Expedition Designation (EXPOCODE) 74DI165A_1

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Ship: RRS Discovery owned and operated by the Natural Environment Research Council, UK and chartered to the Woods Hole Oceanographic Institution.

Ports of Call: Port Louis, Mauritius to Cape Town, South Africa.

Cruise Dates: 28 January 1987 to 25 February 1987.

CRUISE OVERVIEW

Cruise Track

The cruise track and station locations are shown in Read et al. (1987) and repeated in Luyten et al. (1990).

Number of Stations

A total of 10 CTD/Rosette stations were occupied employing a 12 place 2 litre Niskin Bottle Rosette with a Neil Brown CTD.

Sampling

Water samples measurements were made for salinity and oxygen. Although CTD data were carefully reconciled with the sample values the latter are no longer available.

Current meter moorings

The data from these moorings is lodged with the WOCE current meter DAC,Oregon in its historical (non-WOCE) collection. It can be found via the name of the PI, J.R.Luyten, or via the experiment name, Agulhas Retroflection.

SECTION 2: SCIENTIFIC PROGRAMME

The primary objective of the cruise was to recover ten moorings set two years earlier in the Agulhas Current and Retroflexion Zone off southern Africa. A full depth CTD cast was done in the vicinity of each mooring and 3700km of SeaSoar sections were run in the Agulhas Retroflexion Zone.

A brief narrative follows. After leaving port Discovery steamed for and recovered mooring WHOI No. 843. After recovering a second mooring (842) SeaSoar was launched and towed approximately parallel to the path of the Agulhas current until the next group of moorings was reached. There moorings 841, 840, and 839 were recovered. The SeaSoar was deployed for a three-day run to the next mooring (837)

while making a section across the Agulhas. Moorings 837, 838, 834, and 835 were recovered with tows between them. After recovery of the final mooring 836, the remainder of the cruise was spent towing SeaSoar. The time in the water was curtailed by heavy weather, and the cruise was curtailed by a serious fire in the Engine Room.

SECTION 3: UNDERWAY MEASUREMENTS

A) SEASOAR

Seasoar - towed yoyo CTD measurements were made between the surface and a nominal 400m depth along 3700km of track. These data can be recovered from the British Oceanographic Data Centre (BODC) and information concerning them can be found in Read et al. (1987).

SECTION 4: STATION MEASUREMENTS - CTDS

As noted above a full depth CTD station was made at the location of each mooring; thus ten casts were made. A CTD station list can be seen in the Summary file. All casts were made with the IOS Neil Brown Instrument Systems "New Deep CTD" and were made to full ocean depth. A transponder attached to the CTD frame was used to make casts to within 20m of the bottom whenever a good bottom echo could be seen.

Procedures for calibrating and verifying the data are described in Read et (1987) and can also be found in the documentation for the previous cruise, namely Discovery 164, made the previous month with many of the same IOS personnel on board.

REFERENCES

Luyten, J., Spencer, A., Tarbell, S., Luetkemeyer, k., Flament, P., Toole, J., Francis, M., and Bennett, S. 1990. Woods Hole Oceanographic Institution Technical Report WHOI-90-30, 100pp.

Read, J.F., Pollard, R.T. and Smithers, J. 1987. CTD and SeaSoar data from the Agulhas Retroflection Zone. Institute of Oceanographic Sciences, Report, No. 245, 91pp.