

WFP Ref. No.: IR4/ICM8  
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Ship name: R/V SONNE  
Cruise No.: SO 73

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Dates: Dep Goa 23 Dec. 1990  
Arr Colombo 11 Jan. 1991

Began station work south of Sri Lanka along 80 30'E, worked down to 6 S and back northward along that section. Station work was terminated south of Sri Lanka.

Three moorings were deployed north of 4 15'N and a total of 41 CTD stations and 20 Pegasus profiles at 11 stations were taken.

CTD station separation was generally 30 nm and was better near the northern border and near the equator. CTD stations were to the bottom at full degrees lat., at all Pegasus stations and near the northern boundary. Oxygens were analyzed from 24 bottle samples per station. Freons were measured by M. Rhein (IFM Kiel) on a subset of the stations.

The three moorings, focussing on the Monsoon Current regime, are part of WOCE array ICM8. Two of them (K1, K3) carry upward- looking ADCPs at 250 m depth to measure the near-surface currents; and a total of 14 Aanderaa current meters are deployed, most of them above the 1000 m level, and some equipped with conductivity sensors.

Underway Doppler current measurements were carried out with shipboard ADCP down to about 180 m, and at some CTD stations current profiles down to 1500 m were obtained by attaching a self-contained ADCP to the rosette.

The Monsoon Current was found to be confined to the area north of about 4 N, carrying low-salinity Bay of Bengal water westward with near-surface velocities exceeding 1 m s<sup>-1</sup>. South of that regime, currents were quite variable but with a persistent westward undercurrent in the depth range 50 - 150 m in the equatorial band.

Since R/V Sonne is not returning to the Indian Ocean in time for mooring retrieval, we are looking for a vessel in the time frame December 1991 - April 1992. One possibility explored at present is charter of a Sri Lanka fishing vessel; another one is the Indian R/V Sagar Kanya passing by there in late 1991. We are also trying to arrange Pegasus measurements on a smaller vessel out of Sri Lanka. Any other suggestion we could pursue would be welcome.

Funding requests to extend array ICM8 southward and to repeat the section work will be submitted shortly to the FRG-WOCE program.