

## UPPER LAYER CIRCULATION OF THE MARMARA SEA

Şükrü Beşiktepe, Halil İ Sur, Emin Özsoy, Ümit Ünlüata†

† *Institute of Marine Sciences,  
Middle East Technical University,  
PK 28 Erdemli, İçel, 33731 Turkey*

The upper layer circulation of the Sea of Marmara during periods of high and low fluxes from the Black Sea (during October 1991 and March 1992) was determined from a combination of velocity and hydrographic data. Velocity data were obtained with a 150 Khz vessel-mounted Acoustic Doppler Current Profiler (ADCP) on board the R/V Bilim. ADCP measurements were carried out at fixed oceanographic stations and during cruising.

During the period of high discharge (March 1992), northerly winds were dominant, and the surface currents were mainly directed southward along the Anatolian coast. At exit into the Sea of Marmara from the Bosphorus, current velocities reached 300 cm/s and were on the order of 20 cm/s elsewhere in the anticyclonic circulation of the Sea of Marmara.

The upper layer flow exiting from the Bosphorus was not well defined during the low discharge period of October 1991. The exit flow was initially attached to the western side and followed the Thracian coast, while the basin general circulation was anticyclonic.