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A hydrographic cruise was conducted on the R/V THETIS from 6 - 11 August 1991 in the Lazio Shelf region between the Islands of Ponza and Giannutri and from the coast out to a depth of 800 m (Fig. 1 a) by SoProMar as a part of a project with the Ministry of Merchant Marine to assess the impact of the Tevere River discharge. The circulation in northern Tyrrhenian is typically described as being dominated by a cyclonic gyre (e.g. KRIVOSHEYA and OVCHINNIKOV, 1973) and in wind-driven models (e.g. ARTALE *et al.*, 1992). While it appears to be an annually persistent feature, its scale and intensity vary in response to the wind field (ARTALE *et al.*, 1992) and to the strong seasonality of the Corsican outflow to the Ligurian Sea (cf. ASTRALDI and GASPARINI, 1991).

The cruise data revealed physical and biological conditions different from what is generally understood to be the normal summer situation. The nearshore zone (~5 km to 30 m) was uncharacteristically cooler than the offshore waters by 1-4°C (Fig. 1a) The Tevere plume was distributed slightly offshore to the south, (Fig. 1b), contrary to its normal tendency along the nearshore to the northwest. The hydrographic data indicated a net onshore flow onto the Lazio shelf (~2500 m<sup>3</sup>/s), the difference between a strong onshore flow to the north and a weaker offshore to the south (Fig. 1c). The northwestern corner of the sampled regime appears to have included the cyclonic perimeter of the northern Tyrrhenian gyre as it was impinging on the shelf. In late July of 1991, satellite thermal imagery (BOHM, pers. comm.) suggested the gyre to have been relatively weaker until a 26-27 July westerly wind event that may have caused the gyre to intersect the Italian shelf further to the north than normal. The mean winds during the cruise were light ~2.5 m/s westerlies with a sea-breeze modulation of ~3 m/sec. It is suggested that these winds were insufficient to have set up and maintained the observed shelf circulation and that it likely was initiated by the preceding wind event and sustained by the anomalous offshore circulation. This work provides a preliminary discussion of the role of the circulation in the generation of the unprecedented quantity of mucilaginous algae observed during the cruise period.

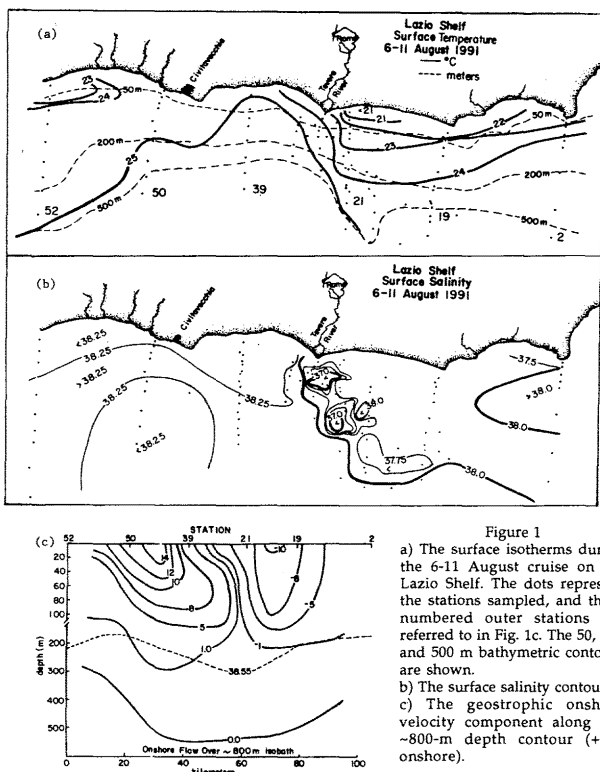


Figure 1  
 a) The surface isotherms during the 6-11 August cruise on the Lazio Shelf. The dots represent the stations sampled, and those numbered outer stations are referred to in Fig. 1c. The 50, 200 and 500 m bathymetric contours are shown.  
 b) The surface salinity contours.  
 c) The geostrophic onshore velocity component along the ~800-m depth contour (+ is onshore).

REFERENCES

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