



The Levantine Intermediate Water (LIW) pathways in the northern Adriatic and its relation to bora events

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The modified Levantine Intermediate Water (LIW) pathways in the northern Adriatic in winter season 1999/2000 were investigated on the basis of monthly collected hydrographic data along the Po river delta-Rovinj profile. After a strong bora episode LIW was flowing into the northern Adriatic in a water band extending from the surface to the bottom in the western part of the section (on 18 December 1999). About two weeks later, in conditions of moderate bora wind, the major LIW inflow occurred in the eastern part of the section (on 5 January 2000). As Adriatic circulation is cyclonic, with an inflow across the eastern coast (EAC, East Adriatic Current), the results support the hypothesis that the EAC is on some occasions deflected towards the west, entering the northern Adriatic in its central/western part. In addition, they indicate that these occurrences are related to strong bora events. The EAC may be shifted towards the west by strong currents which, during such events, emerge from the Bay of Kvarner, approximately on the line between the central and northern Adriatic.

In winter season 1999/2000 modified LIW was observed at the Po-Rovinj section in the period between December and February. (During the February cruise, after a one month period of moderate winds, modified LIW was observed only in a small area in the bottom layer near the Po delta). The modified LIW was identified as water with a salinity of 38.4. This value was obtained by analysis of the 1967-2000 changes of February bottom salinity (30 m) at stations located in open waters of the eastern (station 1) and western (station 2) part of the Po River delta-Rovinj profile. Although the surface layer in the region is generally affected by fresh waters, the bottom salinity varied within a relatively small interval (37.4-38.6.). The bottom values were on average slightly higher at station 1 (38.1±0.2) than at station 2 (38.0±0.3). Values lying outside standard deviation ranges were ascribed to LIW inflow. They were observed

in 1981 (at both stations 1 and 2), 1989 (at station 1), 1990 (at station 2) and 2000 (at station 2).