



Two aspects of winter hydrographic conditions in the northern Adriatic

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The northern Adriatic is the place where the densest Mediterranean water can be formed. A long term (1966-2000) analysis of February thermohaline properties at two stations showed that two types of winter hydrographic conditions can occur in this region: type "A", when bottom salinity and density are higher in eastern than in western part of it and type "B", when values for these parameters are higher in its western than in its eastern part. In winters of type "B" the average density of northern Adriatic bottom waters in February was higher than in winters of type "A". To get more information on "A" and "B" types we analyse the distribution of temperature, salinity, density and geostrophic currents relative to 30 m in winters of 2000 (type "B") and 2001 (type "A"). Data collected at 45 stations at three transects, starting 5 miles offshore, the first between the Po River delta and Rovinj, the second one between Rimini and Pula, and the third between Ravenna and Susak, were used. In January and February of 2000 only the surface layer of several stations, closest to the Po delta, was affected by low salinity and low density waters. In the bottom layers of the same stations very cold, saline and dense ($\sigma\text{-t} > 29.9 \text{ kg/m}^3$) water was observed. A large cyclonic meander north to the Rimini-Pula section and a large anticyclonic meander souther appeared in both surface and bottom layers. In December 2000 and February 2001 hydrographic and dynamic conditions were different. There was a low density area both in surface and in bottom layer in the vicinity of the delta, encircled by a large anticyclonic meander. South to the Rimini-Pula section cyclonic motions were

observed. A “B” circulation type seems to appear during episodes of strong bora wind.