

Adriatic Sea general circulation and its variability (POEM Results)

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The Adriatic Sea basin-wide circulation and its temporal variability is reviewed based on the results of analysis of hydrographic data collected during POEM cruises. Major well known characteristics of the circulation are revealed from the present data set which covers the period from October 1985 to April 1987. A prominent signal associated with the seasonal variability, is identified the outflowing water along the Italian coastline. Differences between autumn and spring in the vein of cold and fresh water along the Italian shelf break, manifest mainly in the temperature field. In the surface layer during the stratified season in the Southern Adriatic the fresh water spreads over the entire surface. On the other hand, during the spring i.e. the period when the sea is vertically homogeneous, the fresh water remains confined in the surface alongshore boundary layer over the entire length of the Italian shoreline. Layers below the seasonal thermocline at the eastern portion of the sea display very weak seasonal signal. A strong signal associated with the inter-annual variations have also been documented from the analysed data set. It mainly appears in the salinity field. It is shown that in the spring 1986 the salinity averaged over the entire water column north of the Palagruza Sill is by 0.3 PSU smaller than in the spring 1987. The same but less prominent difference is noted in the southern Adriatic. These differences are related to the variations in climatic conditions over the area, the river run-off and the Mediterranean water inflow.