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In order to reproduce bora induced motions on the Adriatic shelf going from the hydrostatic state marked seiche and inertial oscillations are present in modelling results which will be discussed here. Here used model is a levels non-linear model written in semi-staggered grid with forward-backward time scheme.

Considering area of the longitudinal cross-section of the Adriatic basin one can see that "G" point in the Figure 1. to which the area of integration extends, can be identified as the opening of the semi-closed basin surrounded by infinite sea. This semi-enclosed basin is the main part of the the Adriatic shelf. For the Jabuka Pit the results of spectral analysis of the sea level (using Daniell's filter) are given in Figure 2. It is well known that the main periods of Adriatic seiche are 21, 11, 8, 6,... hours (MANCA *et al.*, 1974). In Figure 2 the seiche of 8 and 6 hour periods are pronounced while these of periods of 21 and 11 hour are not. VERCELLI (1941) identified seiche of the period of 21 hours as fundamental of the whole Adriatic, that of the period of 11 hour as binodal seiche of the whole Adriatic and the seiche of 8 and 6 hour periods in the modelling results as free oscillations of the Adriatic considering it as closed basin. Used boundary conditions and obtained model results confirm that these oscillations are free oscillations of the sea over the Adriatic shelf. Results of spectral analysis of sea-level obtained by the numerical model were tested by spectral analysis of residues (difference between observed and predicted sea-level) at Koper (North Adriatic), Split (Middle Adriatic) and Dubrovnik (South Adriatic). Monthly time-series of residues were analyzed in January 1982 where free oscillations of the whole Adriatic Sea were observed. Seiche of 8 and 6 hour periods were observed at Koper and Split but not at Dubrovnik. This is shown in Figure 3. These experimental results confirmed theoretical results obtained by the model stated that 8 and 6 hour seiches are free oscillations of sea over the Adriatic shelf.

Figure 1 -  
Cross-section area  
in function of  
distance from  
Otranto to  
Venezia in  $10^6 \text{ m}^2$

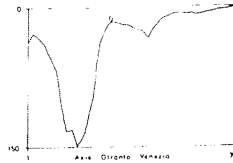


Figure 2 -  
Spectral density  
predicted by  
the model  
in the Jabuka Pit

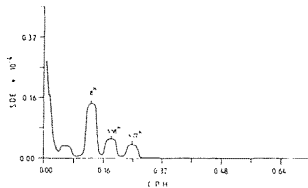
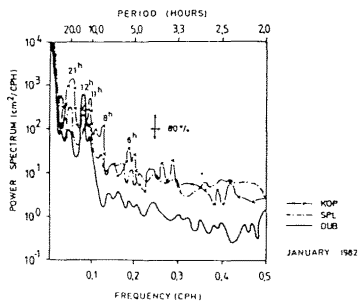


Figure 3 -  
Observed spectral  
densities



#### REFERENCES

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 VERCELLI F., 1941.- Le maree e le sesse nel porto di Zara. *La Ric. Scient.*, 12, I.