O-III3

OBSERVATIONS OF EDDY VARIABILITY DURING POEM-O-85 : I. SATELLITE SEA SURFACE TEMPERATURE ANALYSIS

G. VIVANTI, F. PARMIGGIANI and N. PINARDI

I.M.G.A., C.N.R., Modena (Italy)

Polar - orbiting Satellite (NOAA - 9) AVHRR data have been analyzed in order to produce sea surface temperature for the whole region of the Eastern Mediterranean during the Intensive Field Period surveys of P.O.E.M. O - 85.

Split - window algorithms have been used to retrieve Sea Surface Temperature (SST). In order to identify the thermal frontal structures, coloured SST maps have been produced above cloud - free regions of the Eastern Levantine Basin. The informations are given at 1 Km resolution so that Eddy resolving models of the Eastern Mediterranean Circulation could use directly the satellite surface data. Qualitatively, the pictures shows a strong surface Eddy activity in the whole Eastern Basin and a few upwelling centers are also noticeable.

O-III4

SPATIAL AND TEMPORAL VARIABILITY OF THE SEA SURFACE COLOR FIELD IN THE NORTHERN ADRIATIC SEA

V. BARALE, P. MALANOTTE RIZZOLI° and C. McLAIN

° Department of Meteorology and Oceanography, Massachusetts Institute of Technology, Cambridge, Mass. (U.S.A.)

A time series of Coastal Zone Color Scanner images, for the years of 1979 and 1980, was used to observe the spatial and temporal variability of bio-optical processes and circulation patterns of the Northern Adriatic Sea, on monthly, seasonal and interannual scales. The chlorophyll-like pigment concentrations derived from satellite data exibited a high correlation with sea-truth measurements performed during seven surveys in the summer of both years. Comparison of the mean pigment fields indicates a general increase in concentration values and larger scales of coastal features, from 1979 to 1980. This variability can be linked to the different patterns of nutrients influx due to coastal runoff in the two years. The distribution of surface features is consistent with the general cyclonic circulation pattern. The pigment heterogeneity appears to be governed by fluctuations of freshwater discharge, while the dominant wind fields do not appear to have important direct effects. The Po river presents a plume spreading predominantly in a south-easten direction, with scales positively correlated with its outflow. The spatial scales of the western coastal layer, instead, are negatively correlated with this outflow, and the plume scales. Both results are consistent with, and may be rationalized by, recent theoretical and experimental results involving a dynamical balance between nonlinear advection and bottom friction, with alternate predominance of one of the two effects.