

Hydro-geomorphological classification of the Albanian coastline in the Mediterranean sea

Niko Pano¹, Alfred Frasheri², Bardhyl Avdyli¹, Koço Gjoka³, Marenglen Bukli³, Shpetim Bozdo⁴

1. Hydrometeorological Institute, Hydrology Department

2. Faculty of Geology and Mining, Polytechnic University of Tirana

3. Albanian Academy of Sciences, Institute of Informatics and Applied Mathematics

4. Polytechnic University, Department of Mathematics and Informatics

Abstract. Albanian coastal area in the Mediterranean sea is about 380 km. long with about 284 km along the Adriatic Sea, and the remain 96 km facing the Ionian Sea. This area represents the Easter side of Otranto Strait. River mouths and deltas, lagoons system, abandoned riverbeds, inland, marsh labyrinths, sandy beaches, dunes covered with vegetation, dens forests, represent Albanian littoral, with enormous international importance for its biodiversity and natural productivity. This area is considered one of the most complicated natural areas of the Mediterranean Sea.

In this paper it is attempted to present a general evaluation of the natural particularities of the sea coast in Albania. Morphological classification and coastal evaluation are the principal components of the paper.

Marine and onshore integrated surveys and the studies for investigation, monitoring and estimation of the physical characteristics of the Albanian coastal area were performed during the period 1958-2005.

The natural particularities of the sea coast is mainly determined by variation of the impact of climate change, continental water discharge in the sea, suspended load discharge, wave refraction, trajectory of the main marine currents in the coastal area, etc.

The shores have differences concerning geological, climatic, geomorphologic, sediment logic. Fluvial features in structure of a coastal zone and talaso graphic field. Six physiographic units-regions that have the original ways of development according to the modern morph dynamical and litho dynamical regime were distinguished. Various parameters of the shore dynamics are represented.

Results of the integrated offshore and onshore geological-geophysical surveys and hydrographical studies in Albanian littoral are presented in this paper. Hydro morphological studies were performed to evaluate geomorphologic characteristics, and the migration of the Albanian coastline in the Mediterranean Sea. The wave refraction in the coastal area is analyzed by wave refraction diagrams, determination of the littoral sediment transport and coastal sedimentation, the classification of the erosion and accumulation processes, under wave refraction, sea currents, are studied by analysis of marine onshore surveys data.

¹ Hydrometeorological Institute, Hydrology Department, Tirana, Albania
e-mail: bavdyli@icc-al.org Tel: ++355 4 245370 and e-mail: kgjo@inima.al