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LONG TERM STUDY OF RADIOACTIVITY IN SUPERFICIAL WATER IN ALBANIA

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ABSTRACT

Albania has more than 152 rivers and streams, forming 8 large rivers flowing from southeast to northwest, mainly discharging towards the Adriatic coast. The rivers of Albania have a total annual flow rate of 1,308 m³/s per year. A screening of beta radioactivity in superficial waters (rivers and lakes) in Albania originates from 1970, which was one of the most important activities of Institute of Nuclear Physics (INP) for about 20 years. Samples for gross beta radioactivity were taken from representative rivers: Mat, Erzen, Ishem, Drin, Shkumbin, Seman and Vjose. Sampling has been periodic every two months. During the 1990 – 2004 after the change of political system this activity was reduced in 4 times per year. Since 2005-2007 the monitoring activity was financially supported by Ministry of Environment, National Environmental Agency (NEA), also 4 times per year. During 2007-2009 the cooperation project “Monitoring of radioactivity in drinking and surface waters in Albania” between IANP and Riso National Laboratory, University of Copenhagen supported by DEMA, Denmark. In 2015 also the NEA agency financed the monitoring of gross alpha/beta concentration in superficial waters every season of the year. Although Albanian legislation does not have limits on the level of radioactivity in river waters, use of some rivers for supply of water reservoirs for public consumption and irrigation of crops requires continuous monitoring. In this study were summarized the results of these long-term measurements.

Keywords: Gross alpha/beta radioactivity, Superficial water, Efficiency calibration