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DETERMINATION OF THE FLOOD DEFENSE EMBANKMENT ELEVATION CROWN, USING ADVANCED HYDRODYNAMIC MODELING

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Abstract

The accelerated economic and social development of some urban areas has as result the construction of different social and economic objectives in areas with a potential flood risk too, although the good practices prohibit this thing. Thus, the application of different structural and non-structural measures with the defense role against flooding those areas, is necessary. The national management strategy of the flood risk provides the application of some policies, procedures and practices in order to reduce this risk, so that all the citizen to develop in a sustainable social environment. This paper has as purpose the determination of the height of this type of hydrotechnical works (embankments) with defense role against floods of social as well economic objectives. Considering that these embankments have as purpose not only the defense against floods of an inhabited area, but also the protection of some natural water resources, the work can be included in the field of environmental problems. Very important and an additional argument to the environmental problem is the fact that Lilieci Reservoir that represents also study area, was declared wildlife reserve and is part of the special avifauna protection area Lilieci with a total surface of over 2.6 km². More than 100 species of birds, live in the over 10 hectares of reeds and rushes on the territory of the reservation and on the water surface.

Many areas of our country declared natural reserves are in danger or even destroyed year by year due to devastating floods. Thus, it is necessary to take protection measures for these areas so particularly important for the biodiversity conservation. This document presents step by step the determination of the elevation crown of these works with the defense role against floods on the natural habitat, using the advanced hydraulic modelling.

Keywords: biodiversity conservation, climatic changes, environmental protection, flood risk, quasi-2D hydraulic modelling

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