

## **MATHEMATICAL MODELING OF FLOW AND POLLUTION IN MARINAS**

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### **ABSTRACT**

A three-dimensional mathematical model, expressed in layer formulation is presented for the calculation of the hydrodynamic circulation and water quality in coastal areas. Preliminary calculations, performed in an area with simple geometry, suggest the use (a) of a minimum number of 6 layers and (b) of a parabolic distribution for the vertical diffusion coefficient. The model is applied to a marina to calculate (a) the circulation and renewal of waters and (b) the fate of a conservative pollutant due to an accidental surface pollutant discharge from a boat located in the marina.