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THE STRUCTURE OF SHALLOW WATER TIDAL CURRENTS

Part I: Theoretical solutions based on the eddy viscosity model

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ABSTRACT

The tidal currents in an off-shore shallow water area with homogeneous density distribution are controlled mainly by vertical friction. Due to the vertical frictional effect, tidal ellipse will be deviation and damping with depth. With the assumption of flat bottom and based on the eddy viscosity model, this article briefly discuss the theoretical solutions and properties of constant eddy viscosity, 2-layer distribution of eddy viscosity, eddy viscosity are slowly varying continuous function of depth and linearly function of depth, respectively.

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