

**A mathematical model
to study tidal propagation
in Patraikos Bay**

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In this work, a mathematical model is applied to determine the tidal elevations and circulation associated with the main tidal constituents, in the bay of Patraikos at Western Greece.

Accepting the classic hydrodynamic theory with equations of continuity and motion, we approach the coastal boundaries and bottom topography of the bay, by means of a reversed cone with ellipsoidal base. The explicit solution of the final differential equation is given in this presentation.

Comparison of the results of this model to a monthly data set from four stations along the coast confirms the reliability of the model tidal prediction.

REFERENCES

LAMB, A. (1975): *Hydrodynamic*, VIIIth edition, Cambridge 1975.

