

Abstract Submitted
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A three dimensional Dirichlet-to-Neumann map for surface waves over topography¹ ANDRE NACHBIN, DAVID ANDRADE, IMPA/Brazil — We consider three dimensional surface water waves in the potential theory regime. The bottom topography can have a quite general profile. In the case of linear waves the Dirichlet-to-Neumann operator is formulated in a matrix decomposition form. Computational simulations illustrate the performance of the method. Two dimensional periodic bottom variations are considered in both the Bragg resonance regime as well as the rapidly varying (homogenized) regime. In the three-dimensional case we use the Luneburg lens-shaped submerged mound, which promotes the focusing of the underlying rays.

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