

The Mathematics of Ocean Surface Waves

Abstract

Deep understanding and detailed investigation of ocean waves cannot be achieved without the help of mathematics. In this seminar, I will attempt to emphasise the importance of applying some fundamental mathematical techniques to the solution of ocean engineering problems. I will show how accurate formulation, solution and analysis of the solution provide a significant physical insight on various ocean dynamics, including tsunamis, wave energy conversion and acoustic-gravity waves.

References

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- Renzi, E. & Sammarco, P. 2010 Landslide tsunamis propagating around a conical island, *Journal of Fluid Mechanics* **650**, 261-285.
- Sammarco, P. & Renzi, E. 2008 Landslide tsunamis propagating along a plane beach, *Journal of Fluid Mechanics* **598**, 107-119.