Massachusetts Institute of Technology
Department of Mechanical Engineering

MMEC SEMINAR SERIES

Mechanics: Modelling, Experimentation, Computation

Tuesdays @ 4:00pm – Room 3-370 **April 22, 2014**

Acoustic-gravity waves, theory and applications

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Acoustic–gravity waves are compression–type of waves propagating, at near sound speed in water, with amplitudes governed by the restoring force of gravity. They are generated, among others, by wind–wave interactions, surface waves interactions, and movements of the tectonic lithosphere plates. Studying acoustic-gravity waves is important as they explain various natural phenomena, and can be applied for improving technical solutions in water, environmental and coastal sciences.

This is an introductory lecture on acoustic-gravity waves, we discuss the generation of acoustic–gravity waves by underwater earthquakes; knowledge of their behaviour with water depth can be applied for the early detection of tsunami. We also discuss their generation by interaction of surface gravity waves, which explains the major role acoustic-gravity waves play in transforming energy from the ocean surface to the crust, as part of the microseisms phenomenon; and their contribution to ocean currents, in depths that are important, among others, to benthic life.

Seminar Host: Ken Kamrin (kkamrin@mit.edu)

*Please join us for **refreshments beforehand, outside Room 3-370***

For more information, visit our website at http://web.mit.edu/mmec/
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