



## Acoustic–Gravity Waves (AGW): Generation, Propagation, and Interaction

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Deadline for manuscript  
submissions:

**closed (31 July 2019)**

### Message from the Guest Editor

Acoustic–gravity waves (AGWs) are compression-type waves generated as a response to a sudden change in the water pressure, e.g. due to the nonlinear interaction of surface waves, submarine earthquakes, landslides, falling meteorites and objects impacting the sea surface. AGWs can travel at near the speed of sound in water (ca. 1500 m/s), but can also penetrate through the sea-floor surface amplifying their speed exceeding 3000 m/s, which turns them into excellent precursors. “Acoustic–gravity waves” is an emerging field that is rapidly gaining popularity among the scientific community, as it finds broad utility in physical oceanography, marine biology, geophysics, water engineering, multiphase flow and quantum analogues.

**Keywords:** acoustics-gravity; elasticity; vibrations; compressible water; nonlinear wave; triad resonance; early detection; inverse modelling; tsunami; surface impacts; time reversal

