



Towards field and laboratory experiments with ocean acoustic-gravity waves

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Acoustic-gravity waves (AGWs) can be generated in the ocean by mechanical energy transfer from the Earth's crust (e.g. earthquakes or volcanoes) and by energy transfer occurring at the water surface (e.g. interaction of opposing gravity waves, ice-quakes or localized pressure changes). Recent theoretical studies shed light on the underlying physics of the generation and propagation of AGWs in the ocean. However, these theories are yet to be verified further with very challenging field experiments due to the associated low frequency signals required, and ambient disturbances involved. Here, we present a unique setup of field experiments and large scale laboratory tests to verify the main physical properties of AGWs in ocean generated by different types of sources. We also present a novel methodology to generate and measure AGWs in the ocean.