



## **Modelling of the hydro-acoustic signal generated by a tsunami source with account of a porous seabed**

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The semi-analytical solution of the 2-D compressible water layer model overlying a porous seabed is presented. In the frame of a 2-D compressible tsunami generation model with flat porous seabed, we show that acoustic waves are generated and travel outside the source area. These waves carry information as to sea floor motion. The acoustic wave period depends on water height at the source area and is given by four times the travel time the sound takes to reach the sea surface from the sea bottom. The fundamental frequency ranges from 1 to 0.05 Hz, at 400 m and 8000 m water depth, respectively.

The sound waves produced by seafloor motion can propagate far from the source, with a small attenuation in amplitude. The main effect of the porous seabed is a low-pass filtering of the signals and a damping of the tsunami wave amplitude and the acoustic modulation.