

**Harvard University, Solid Earth Physics Seminar**  
Wednesday 28 September 2011, 2:00 pm  
4th Floor Faculty Lounge, Hoffman Laboratory, 20 Oxford St.

***Extracurricular Geophysics or,  
when instruments record what  
they were not designed for***

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***Abstract:*** Recently, and especially in the wake of the 2004 Sumatra and 2011 Tohoku earthquakes and tsunamis, a number of fascinating observations were made on instruments not designed for that purpose: in most cases, they express subtle coupling between media of extremely different properties, such as the oceanic column, the solid Earth, or the atmosphere. They include recording of tsunamis by seismometers at land stations and on the ocean bottom, by hydrophones of the CTBTO, the definitive observation and explanation of tsunami shadows, tsunami signatures in the geomagnetic field, the generation of deep infrasound, and the perturbation of the ionosphere detected on GPS receiver arrays. In most cases, these phenomena are readily explained by the continuation (in a mathematical sense) of the tsunami eigenfunction outside of the water column; we will review other cases from the history of Geophysics, and show that in many instances, the order of magnitude of the effect is well predicted by simple arguments derived under the normal mode approach.