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Earthquakes and water (and why the Lusi eruption was not caused by an earthquake)

Distant earthquakes are well known to induce a wide range of responses in surface water and groundwater. These responses are often viewed as mere curiosities as their occurrence is limited in space and time. The observed phenomena, however, probe the interaction between hydrogeological processes and mechanical deformation in the shallow crust. Hence they provide insight into the interaction between the water cycle, tectonics, and properties of the crust. In this talk I will review observations and explanations for hydrologic responses to earthquakes. I will end by discussing the LUSI mud volcano eruption in Indonesia, whether it too was caused by an earthquake, and will also predict when the eruption will end.