

Understand Volcanoes and Earthquakes Using Physics-based Models



Dr. Chao LIANG
(梁超博士)

Géoazur Laboratory, Université Côte d'Azur, France

The goal of my research is to understand the physical mechanisms that control volcanic and seismic hazard. In this talk, I first investigate waves and oscillations in a coupled conduit-crack system and aspire to address challenges faced by both volcanology and oil industry. I perform numerical simulations in 2D and 3D to capture rich resonant modes in such systems, understand the oscillation physics of distinct modes, and identify general controls on their periods and decay characteristics. I will demonstrate how such understanding is useful for inferring the geometry of subsurface fractures and the properties of magmatic system. I then present recent works in earthquake physics, including a model for orthogonal strike-slip faulting, observation of a quarry triggered earthquake in France, and development in earthquake cycle modeling. I will finish my talk with my vision for future research and teaching.

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Zoom Link: [Here](#)



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Enquires: 3943 9624 essc@cuhk.edu.hk