

The Dynamics of the 2015 Nepal Gorkha Mw7.8 Earthquake



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Dynamic rupture model can provide much detailed insights into rupture physics that is capable of assessing future seismic risk. In this talk, I will introduce a spontaneously dynamic rupture model, which can constrain the frictional parameters of the 25 April 2015 Mw7.8 Nepal earthquake, by combining with multiple seismic observations such as high-rate cGPS data, strong motion data, and kinematic source models. The dynamic model can determine a robust solution of slip-weakening distance, ~ 0.6 m, in contrast to previous kinematical estimation of ~ 5 m. The well-constrained frictional parameters may be used for future dynamic models to assess seismic hazard, such as estimating the peak ground acceleration (PGA) etc. Similar approach could also be conducted for other great earthquakes, enabling broad estimations of the dynamic parameters in global perspectives that can better reveal the intrinsic physics of earthquakes.



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