



## **Dynamic source inversion for physical parameters controlling the 2016 Amatrice, Central Italy, earthquakes**

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We perform dynamic finite-extent source inversion to study the source processes of three earthquakes that occurred close to Amatrice and Norcia, Central Italy, in August-October 2016. The events had moment magnitudes of 6.1-6.5 and resulted in >300 fatalities. To that end, we utilize a modified version of dynamic inversion code by Twardzik et al. (2014). The direct problem is solved by 3D fourth-order staggered-grid finite difference method in a box assuming linear slip-weakening friction law on a planar fault (Madariaga et al., 1998). The optimal solution is sought using the Neighborhood Algorithm by Sambridge (1999). We invert displacement waveforms from the 20-30 nearest stations. The distribution and evolution of slip calculated from physical parameters (stress drop, frictional properties) obtained from the dynamic inversion are compared with results of kinematic inversions and discussed in terms of fault mechanics.