



Asperity and Barrier Map of Colfiorito Area in Italy During 1997–1998 Umbria-Marche Seismic Sequence Inferred from Teleseismic Body Waveform Inversion

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In this study, we determined asperities and barriers distributions for the Colfiorito area using source and rupture process of the 1997-1998 Umbria-Marche seismic sequence. Each asperity has been determined using teleseismic waveform inversion technique. Asperity distributions indicate that the September 26, 1997 earthquakes ruptured neighbor asperities with similar size, 6-7 km from southeast to northwest. The October 14, 1997 earthquake generated a small asperity about 4 km. Looking at the map view of the asperities, there is a clear barrier which is about 8 km between September and October earthquakes. It seems likely that the barrier is very strong and need more energy to be broken. This result suggests that the barrier is important for hazard assessment of a future earthquake and should be considered for seismic hazard studies for the Colfiorito area.