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Migration of Early Aftershocks Following the 2008 Mw 7.9 Wenchuan Earthquake

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The 12 May 2008 Mw7.9 Wenchuan earthquake occurred on the Longmen Shan fault zone, the eastern margin of the Tibetan Plateau, in Sichuan Province, China, causing a death toll of up to ∼80000 and producing enormous economic losses. The temporary Western Sichuan Seismic Array (297 broadband stations; 10–30 km spacing; operational from 2006–2009) covered the central and southern part of the Longmen Shan fault zone, especially the epicentral region of the 2008 Wenchuan earthquake. We use the double-difference relocation and the waveform matched-filter technique to analysis the migration of early aftershocks following the main shock. Our preliminary results can be summarized as follows: 1) our result supported the high-angle listric reverse faulting model; 2) along the strike direction of the Longmen Shan fault, the early aftershocks rapidly evolved with the characteristics of clear spatial and temporal segmentation and inhomogeneous; 3) the aftershocks in the first several hours mostly occurred on or near the Yingxiu-Beichuan and Guanxian-Jiangyou fault interface that ruptured during the main shock.