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Early aftershocks following the 2007 Noto Hanto, Japan, earthquake

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A shallow $M_w = 6.7$ inland earthquake occurred on the west coast of the Noto Peninsula in Japan on March 25, 2007. A fine local tomography and a magnetotelluric (MT) survey conducted after the mainshock [Kato et al., 2008; Yoshimura et al., 2008] found out a low- V_p and high-conductivity anomaly beneath the mainshock hypocenter. In addition, an anomalous depth dependency of the stress field associated with the mainshock was revealed [Kato et al., 2011]. These results suggest a potential involvement of a deep fluid reservoir with the earthquake generation. To access the dynamic interaction of fluids with the aftershock generation, I focus on the early aftershocks just following the mainshock. Recovery of the missing early aftershocks is quite important to state aftershock activity induced by fluid migrations. Thus, I used the waveforms of aftershocks as templates to detect the missing events within one-day after the mainshock, applying the matched filter technique [Shelly et al., 2007, Peng and Zhao, 2009]. We have a total of several hundreds of thousands positive detections.