

Very short recurrence interval of M \sim 6 earthquakes within the common fault zone

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Immediately after the 2011 M9.0 Tohoku-Oki, an intensive seismicity characterized as normal faulting was induced near the Pacific coast in the southern part of Tohoku region [Kato et al., 2011, 2013]. From the end of March in 2011 to the present, we have continued to precisely monitor the seismicity deploying a dense seismic network consisting of around 60 portable stations equipped with short-period sensors (the station interval is around 4 km). The seismicity has continued after the Tohoku-Oki earthquake, while the seismicity rate has gradually decreased. On 28 December, 2016, a magnitude of 6.3 earthquake took place in this region, and boosted up an intensive seismicity. We relocated aftershocks following this event, using seismic waveforms retrieved from the dense seismic network. The relocated earthquakes almost overlapped with those triggered after M6.1 earthquake on 19 March, 2011. A sharp alignments of earthquakes dipping toward SW was clearly imaged. This indicates that two magnitude 6 earthquakes occurred on the common fault zone. This idea is supported by spatial pattern of surface displacements revealed by InSAR technique (GSI, 2017). It is very surprising that M6 earthquakes took place with very short recurrence interval along the common fault zone.