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An InSAR study of the 2017 Biga peninsula swarm

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During 2017 there was a notable tectonic activity in the Aegean region. We present here results on the Biga peninsula swarm that was initiated at the beginning of 2017. The broader study area is known for its geothermal activity. The swarm's earthquake locations are at the neighborhood of Edremit fault (one of the segments of North Anatolian Fault Zone) that dips to the south and is known to have been activated in 1944 with an Mw 6.8 earthquake. The largest events of the 2017 swarm are expressing a normal faulting with a SW fault dipping. Seismic swarms do not always produce a surface displacement footprint. Due to the size of the largest events (∼Mw5) of the 2017 swarm and the absence of a distinct mainshock, the monitoring using InSAR is challenging. However, we managed to detect a deforming signal and define the seismic source of the first Mw5 event. Moreover, InSAR derived source results are compared with results from seismic waveform inversion.