

## Submarine faults activities in the Gulf of Izmit and Gemlik Bay, NW Turkey

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The Gemlik Bay is located in the southeast part of Marmara Sea, where is one of the major active-faulting features seen in the NAF Zone. There are three sets of faults in and around the Gemlik Bay: 1) several south-dipping normal faults along southern coast of the Armtlu Peninsula 2) several continuous north-dipping normal faults along the southern coast of Gemlik Bay 3) small basin bounded two sets of normal fault. These three features of faults can explain right-stepping strike-slip faulting opening the bay by pull-apart mechanism. Almost major faults show that vertical rate of displacement is over than sedimentation rate. In order to evaluate fault activities (time and displacement amount), we tried coring about one of the faults in the bay. After several analysis - magnetic susceptibility, grain fraction and C14 dating, we found two seismic events among the cored interval. After the same method was tried in the Eastern Basin of Izmit Bay, three seismic events are reconstructed. Another way to evaluate seismic activities, we tried to take cores from the deepest (-208m) Central Basin in Izmit Bay. We recognized seimo-turbidites occurred periodically, and can be seen over twenty layers by high-resolution seismic profiling. Among the four meters cored samples (1000-1700 years BP) from the basin, we detected five seimo-turbidite layers.

Seismic events and average intervals reconstructed from two different way-fault coring and seimo-turbidite- are well consistent with each other.