Relationship between offshore active faults around the Noto Peninsula and the 2024 Noto Peninsula Earthquake

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AIST obtained seismic profiling data of wide areas around the Noto Peninsula in 1988 and additional high-resolution profiling data in 2007 and 2008 of near shore area shallower than 150 m bsl. Inoue and Okamura (2010) presented distribution of active faults around the Noto Peninsula and Okamura (2019) published active faults in the wide area of Japan Sea. These studies revealed that about 130 km long SE dipping reverse fault zone continues from about 40 km southwest of the western coast of the peninsula to 30 km northeast of the northeastern end of the peninsula through near offshore zone along the northern coast of the Noto Peninsula. Southwestern part of the fault zone was the source of the 2007 Noto Peninsula Earthquake. NW dipping active reverse faults extend to the SW and NE side of the 130 km long SE dipping reverse fault zone. Based on these active fault information, Investigation Commission of Large-scale Earthquake in Japan Sea (2014) published the result of tsunami simulation assuming that the 94 km long SE dipping reverse fault along the northern coast of the Noto Peninsula (F43) and 56 km long NW dipping reverse fault (F42) to the northeast of F43 could be sources of large earthquakes of Mw 7.6 and 7.3 respectively.
After the 2024 Noto Peninsula Earthquake, its aftershocks extended for about 150 km long area along the offshore active fault including F42 and F43. In our presentation, we will discuss the relationship between the active faults known before the earthquake and seafloor deformations and the geophysical observations after the earthquake.
Reference
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Keywords: active fault, 2024 Noto Peninsula Earthquake, fault displacement, seismic profile

