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## Location of seismogenic faults in Sicily, Italy, by Bayloc seismic location algorithm

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Seismicity occurring in the last few decades along the continental margin of the southern Tyrrhenian region was investigated with the purpose of accurately identifying fault locations and orientations. In this portion of the Nubia-Europe contact belt the Eolie-Tindari-Peloritani fault (ETP) is a regional structure capable of up to 6 magnitude earthquakes linking the ongoing contractional and extensional crustal compartments of Western and Eastern Sicily, respectively. According to several investigators, ETP represents the northwestward propagation of the Malta escarpment, a normal fault linking Eastern Sicily to Malta island which produced magnitude 7 earthquakes in the last centuries. West of ETP in the Tyrrhenian sea the Sisifo fault crosses the compressional compartment and generates seismicity of maximum magnitude over 6. The prevailing off-shore location of these faults has made the data acquisition slow and the definition of geophysical and geological features of these structures quite problematic. Clear improvement in the knowledge of the fault geometry in the study region has been obtained here applying the Bayesian location method by Presti et al. (BSSA, Vol. 94, n. 6, 2004) to earthquake sequences and swarms recorded between 1978 and 2004. Most of the swarms located in the ETP area displayed clear NNW-SSE epicenter trends suggesting that ETP acts as a group of sub-parallel structures rather than as a single fault. The results have been evaluated in the light of the geophysical and geological information available in the literature for the study region.