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Seismicity in the Cinarcik basin, East Marmara: changes due to the 1999 Izmit Earthquake and present-day activity

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We present the evolution of the seismicity in the Eastern Marmara Sea, before and over a decade after the 1999 Izmit earthquake. From the compilation of long term monitoring and high resolution location of microearthquakes, we illustrate the impact of the main strike-slip earthquake on a non homogeneous background activity composed of distinct pre-existing seismic swarms. Two types of swarm activity are rapidly enhanced during the days after the main shock: one within a few hours related to the dynamic Coulomb stress transfer and a slower one after a few days linked to the pressure evolution. After two years, we observe the progressive extinction of the activity on the fault, and more recently, the slow evolution to a new background activity. This new activity is monitored by a recent dedicated short period network. This network allows us to capture the abundant ongoing activity down to small size events. We show that the present-day activity is dominated by severals of the pre-existing swarm like structures, present before the Izmit earthquake.