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T1.5-P24. Evaluation of earthquake-induced strain in promoting mud eruptions: the case of Shamakhi-Gobustan-Absheron area, Azerbaijan

Manifestations of mud volcanism are widespread in Azerbaijan. The number of mud volcanoes in the country located on land and at sea exceeds 250. Mud volcanism is an interesting natural phenomenon. Many mud volcanoes are active at the present time. In the present study we evaluate both the static and dynamic strains induced by earthquakes in the substratum of mud volcanoes. We studied the effects of two earthquakes with Mw 6.18 and 6.08 occurred in the Caspian Sea on November 25, 2000 close to Baku city, Azerbaijan. A total of 33 eruptions occurred at 24 mud volcanoes within a maximum distance of 108 km from the epicentres in the five years following the earthquakes. The overall eruption rate in the studied area of the 50 years before the 2000 earthquakes was 1.24 that is much smaller than the eruption rate of 6.6 of the 5 years following these earthquakes. The largest number of eruptions occurred within two years from the earthquakes with the highest frequency within six months. Our calculated earthquake-induced static effects show that crustal dilatation might have triggered only 7 eruptions at a maximum distance of about 60 km from the epicentres and within 3 years.

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