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Variations revealed by INFREP Radio Network in correspondence of six earthquakes with M_w greater than 5.0 occurred in the Balkan Peninsula and Adriatic Sea on 26 and 27 November, 2019

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In this work we analyse variations in VLF/LF radio signal amplitudes recorded by the INFREP network in the period 16 November – 6 December, 2019 characterized by very intensive seismic activities in the Balkan peninsula, Crete, and Adriatic, Aegean and Black seas. Namely, 38 earthquakes with magnitude greater than 4.0 occurred in this area during the noticed period; the most intensive of them occurred on 26 and 27 November: three events in Albania ($M_w = 6.4, 5.3, 5.1$), one in Crete ($M_w = 6$), one in Bosnia and Herzegovina ($M_w = 5.4$) and two in Adriatic sea ($M_w = 5.4, 5.3$). We study both long- and short- term variations that are already recorded in earlier studies. The long-term variations relate to changes in the amplitude intensities in periods of several days and their existence is shown in many previous studies. The recent analyses also indicate short-term variations in signal amplitude noises started about several tents of minutes before the earthquake (Nina et al. 2020). In this work, we analyse different areas using INFREP network, which allow us to study local changes in the atmosphere. In order to examine possible precursors we considered longer time started and ended 10 days before and after the most intensive of the considered earthquakes, respectively.

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References

Nina, A., S. Pulinet, P. F. Biagi, G. Nico, S. T. Mitrović, M. Radovanović and L. Č. Popović. Science of the Total Environment 710 (2020) 136406