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T1.4-P15 ThunderSeis: Seismic Analysis of Thunder Infrasound

A. Novoselov, F. Fuchs, M. Dorninger, G. Bokelmann
Department of Meteorology and Geophysics, University of Vienna, Austria

Contact: crimeacs@yandex.ru

Thunder represents an important source of seismic and infrasound recordings. Yet they also serve as signal to better understand infrasound propagation and seismoacoustic ground coupling. Infrasound stations have been sparse so far, but the spatial coverage has recently improved dramatically, and we have made striking observations of infrasound propagating across Eastern Austria in 2018, using the seismological AlpArray network. We have observed strong signals of thunder, e.g. during the severe convective weather event on May 2, 2018 in the Viennese region. In combination with the comprehensive Austrian lightning database ALDIS a multiyear time span is available which allows a systematic investigation of lightning detections with thunder recorded on the seismic stations of the AlpArray network. The seismoacoustic observations also illuminate meteorological processes in the troposphere during a thunderstorm event - including the lowest layers of the atmosphere where large parts of human, animal and plant lives take place. This may perhaps also allow to better constrain the mechanisms behind thunder generation and propagation. Indeed, studies suggest that infrasound observations can provide detailed insight into the mechanisms of thunder generation.