



Multichannel Registration of Nonstationary Subterranean Electromotive Forces as Lightning Precursors in the Avacha Bay Territory (Kamchatka): Case Study during Night of July 21(22), 2015

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We explore the results of the subterranean electric measurements obtained by exploiting of multi-electrode systems at the division of atmosphere and tectonosphere. Subterranean electromotive forces have been recorded in the surface soils during thunderstorm, one of which is the rarest phenomena in the territory of the Avacha Bay. Lightning occurred at distances of 15-18 km from subterranean electric stations. From WWLLN sferics we've got the lightning locations and time of registration. Pulse variations of the subterranean electromotive forces have been observed 1-15 minutes before the lightning strikes in the territory of Avacha Bay. We have investigated variations of subterranean electromotive forces and concluded that there is sufficiently distinct dependence between location of a subterranean electric station and location of a lightning strike. A peak in subterranean electric signals has been found 1-15 minutes prior to self-organization of lightning phenomena. The report sums recent activities in the field and propose the necessity to set subterranean multi-electrode systems for further research in thunderstorm/lightning active regions of the Earth as Kamchatka peninsula is not an active lightning region to make a progress in fulfilling such a task.