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The Darmstadt VLF/LF radiophysical station VADar. First observations of terminator times

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Since 2011, based on the knowledge of the Bari, Graz, and Moscow members of the International Network for Frontier Research on Earthquake Precursors INFREP, a new VLF/LF radiophysical receiver called VADar (VLF Antenna Darmstadt), is being under construction at the Darmstadt University of Technology. VADar uses the UltraMSK software for measuring phases and amplitudes of MSK-modulated signals with carrier frequencies up to 96 kHz. This is the double frequency range in comparison with usual UltraMSK-facilities. The time signals are taken from a GPS receiver with precision of one puls per second. It is foreseen to store the data on a FTP-server available to all INFREP members.

Since December 2011, first reliable observations of phases and amplitudes of signals sent by the transmitters NRK, ICV, ITS, HWU, and FTA are made using VADar. The first analysis of the dependence of the yet small amount of data on the daytime was initiated. As the terminator times are clearly to be seen in the data blocks, it is supposed that, in future, the VADar station will be useful for the general geophysical system of earthquake prediction. It is planned to compare modifications of signals propagating at the same time above seismo-active and non-seismic regions. Numerical programmes for the data analysis are under development.