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Study of ionospheric variations from a global network of VLF antennas

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We present a system which records electromagnetic signals, in the Very Low Frequency (VLF: 3 kHz – 30 kHz) and Low Frequency (LF: 30 kHz – 300 kHz) range, 24 x 7 x 365, with the goal of identifying ionospheric variations. An individual system consists of a monopole antenna, a pre-amplifier, a power supply, a central computer, a GPS unit, and a recording device. Several receivers will be implemented around the globe in a network. The first implementation of the system was done in Graz (Austria), the second one will be in Guyancourt (France), a third one in Réunion (France) and a fourth one in Moratuwa (Sri Lanka). Each reception device will allow a continuous daily monitoring of transmitter signals in the VLF and LF frequency bands. This network will be devoted to the study of ionospheric variations, in particular, those linked to the solar activity, but also those associated with seismic activity with the purpose to identify electromagnetic earthquake precursors.