

Objectives and current status of the SAVNET network

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We will present the status of the construction of the VLF receiver network SAVNET (South America VLF NETwork). SAVNET will provide 7 to 9 receiver stations, each one is composed by a vertical Ez antenna, two loop antennae, pre-amplifiers to enhance the VLF signal, a GPS, a sound card (used as a A/D converter), and the SoftPAL (Software Phase and Amplitude Logger) program. The latter is responsible for amplitude measurements and phase-decoding of the MSK signals. Since loops have sharp directivity of their radiation pattern and Ez antennae are mainly omni-directional, this setup will allow us to observe the signals of many VLF transmitters from a single receiving location. The scientific objectives of the SAVNET network are: (i) to use the ionosphere as a solar activity monitor, by monitoring the ionospheric D region phase variations as a function of the solar activity cycle; (ii) most of the receiver sites have been chosen for their location relative to the Brazilian Magnetic Anomaly, giving us the opportunity to study its spatial structure; (iii) the study of atmospheric and natural processes, like those related to seismo-electromagnetic phenomena.