AUTOMATION OF OBSERVATIONS ON UTR-2 AND GURT RADIO TELESCOPES

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Ukraine is one of the leading radio astronomical countries due to developing and exploitation of the world largest and most efficient radio telescopes UTR-2 and URAN operating at decameter wavelengths. For more than 40 years they have been the main tools for exploration of cosmic radio emission at the lowest frequency range of below 33 MHz. These radio telescopes enabled obtaining of a great number of top priority astrophysical results recognized by the international radio astronomical community. In the recent years, this is stimulated by the integrated research program of NAS of Ukraine "Modernization of the UTR-2 radio telescope and prospective development of decameter radio astronomy in Ukraine", which besides modernization of existing instruments take place a creation of additional new-generation radio telescope GURT.

In 2013-2015, a new software and hardware controlling complexes developed and installed on the UTR-2 and GURT radio telescopes. They designed for planning observations of discrete cosmic radio sources and areas of the celestial sphere, for programming control of directional patterns of radio telescopes, for control and monitoring of other systems.

Automation of observations made on the basis of distributed means, operating in the local network of the observatory. Local computer network also received further development. We created Grid cluster to store large volumes of radio astronomy data. The structure of automation and their basic functionality are shown in the report. It significantly automates the process of radio astronomy observations.