

THE STATE AND PROSPECTS FOR THE PROJECT
“POLAR GEOPHYSICS OF YAMAL”

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Since 1972 we work to develop the distributed ground-based instrument array along 145 Geomagnetic Meridian. At 1991 the network was destroyed and now we make efforts the restore Yamal geophysical network. Main part of Yamal located is auroral zone where we have observe the space weather effects in high-tech systems. The network of stations provide a powerful tool for monitoring rapidly-varying magnetospheric and ionospheric processes. Most popular service is the auroral forecast and the local magnetic variations. Next level of Yamal geophysical network development will include GPS receivers, riometers, VLF-receivers, optical instruments, etc. The network of GPS receivers is providing a capability to map the overlying ionosphere and to investigate the effects of solar storms on communication and navigation systems. The set of sensors along one meridian will display time-space resolution with high accuracy regarding regional level.

Now we had the project “Polar Geophysics of Yamal” in which we have 3 magnetic observatories, another two will be installed during 2013 and 5 variation stations under construction now. We also propose the scanning riometer line with 5 points along one meridian from Bely Island to Nowy Port (800 km length). Also we have some geophysical prospecting data which might be used for research programs. In view of coming space projects as SWARM, RSBP, RESONANCE, MMS we have a perfect prospects for study of magnetospheric processes on all levels from ground to the outer space.

The data of the project “Polar Geophysics of Yamal” in high demand now by gas companies which operate in this area. One of the key issues are the magnetic field corrections during directional drilling. The open source information system based on the project “Polar Geophysics of Yamal” have a good prospect for the future. In view of necessity of next generation of researches we hope that ground-based instrumentation will provide real-time data for a wide variety of research, applications, public outreach and educational projects.