

PWINGプロジェクトによるサブオーロラ帯における内部磁気圏プラズマ・波動計測の現状

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Current status of the ground-based network observation of the inner magnetosphere by the PWING project at subauroral latitudes

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<http://www.isee.nagoya-u.ac.jp/dimr/PWING/>

The plasmas in the inner magnetosphere have wide energy ranges from electron volts to Mega-electron volts. These plasmas (electrons and ions) rotate around the earth longitudinally due to gradient and curvature of geomagnetic field and interact with ULF/ELF/VLF waves at frequencies of mHz to kHz to cause their energization in the equatorial plane of the magnetosphere and loss into the ionosphere. The PWING Project (study of dynamical variation of Particles and Waves in the INner magnetosphere using Ground-based network observations, <http://www.isee.nagoya-u.ac.jp/dimr/PWING/>) started in April 2016, supported by a Grant-in-Aid for Specially Promoted Research of the Japan Society for the Promotion of Science (JSPS), in order to provide global distribution and quantitative evaluation of the dynamical variation of plasmas and waves in the inner magnetosphere. We have been operating all-sky cooled-CCD imagers, 64-Hz sampling induction magnetometers, 40-kHz sampling ELF/VLF receivers, and 64-Hz sampling riometers at 8 stations at subauroral latitudes (~60 MLAT) around the geomagnetic north pole, as well as two 100-Hz sampling EMCCD cameras at two stations. The stations are distributed in Canada, Iceland, Finland, Russia, and Alaska. We combine these longitudinal network observations with the ERG (Arase) satellite, which was launched on December 20, 2016, and our global modeling studies. Using these comprehensive dataset, we investigate dynamical variation of particles and waves in the inner magnetosphere, which is one of the most important research topics in recent space physics. The first campaign observation of PWING project with the newly-launched ERG satellite was conducted in March 21-April 2017. In this presentation, we show current status of these instruments of the PWING project and preliminary results obtained from the first ERG-ground campaign.