

## Derivation of the energy spectrum of precipitating electrons using EISCAT and multi-wavelengths photometer observations

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We have been examining the physical process underlying various phenomena occurring in the polar ionosphere by using EISCAT radars and other techniques. In February 2001, we newly installed a multi-wavelengths photometer in Ramjordmoen, Tromsø, Norway. The photometer is designed to detect auroral emissions with four wavelengths such as 427.8 nm (N<sub>2</sub><sup>+</sup> 1NG), 630 nm (OI), 670.5 nm (N<sub>2</sub> 1PG) and 844.6 nm (OI), and by taking ratios of each emission the average energy of the precipitating electrons can be derived. For increasing the number of simultaneously observations with EISCAT UHF radar, we plan to operate the photometer system continuously during dark-period for at least 5-years and made the photometer system controlled automatically by a PC with Linux.