

## Cutting edge of solar-terrestrial sciences with EISCAT

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Since early 1980's the EISCAT (European Incoherent SCatter) radar system has been playing a unique and important role on understanding not only the magnetosphere, ionosphere and thermosphere physics but also sciences in the solar wind and the lower atmosphere such as the mesosphere and still been developing. This paper briefly reviews some significant achievements with the EISCAT and describes its ongoing developments towards new sciences; e.g., those of interferometric and very high time-resolution observation techniques to study very thin auroral rays and arcs, those of tristatic phased array radars to study fully 3-D ionosphere and thermosphere, etc.