

WEBINAR, 14 February 2023, 13:00 UTC

Title: Probing the polar ionosphere in-situ and remotely

Speaker: Dr. Wojciech Miloch (University of Oslo)

Abstract:

The polar ionosphere is inherently complex. It provides a coupling between the space plasma and lower parts of the atmosphere, and controls the energy input from the solar wind into the atmosphere. It is subject to a variety of instabilities and turbulence, which lead to significant plasma structuring within the auroral oval and in the polar cap. This structuring impact the radio wave propagation and under certain space weather conditions it may degrade systems that rely on these signals (such as GNSS or radio-communication). In order to understand the processes in the polar ionosphere, we investigate it with ground-based as well as in-situ measurements with sounding rockets and satellites, carry out numerical simulations, and develop models for the polar ionosphere. In this talk, I will present plans and recent achievements from our studies within the 4DSpace Strategic Research Initiative at the University of Oslo. I will also discuss our research infrastructure and its developments both in space as well as in the Arctic and in Antarctica.