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In-situ measurements of small-scale structures in neutrals and plasma species during ECOMA-2010

B. Strelnikov, A. Szewczyk, and M. Rapp

Leibniz Institute of Atmospheric Physics, Radar Soundings and Sounding Rockets, Kühlungsborn, Germany (strelnikov@iap-kborn.de)

In December 2010 the fourth and final ECOMA rocket campaign was conducted at Andøya Rocket Range (69 °N, 16 °E) in Northern Norway. Three sounding rockets were launched to study the effect of the Geminid meteor shower on the properties of meteor smoke particles (MSP). The main instrument, the ECOMA particle detector has measured, among other things, number densities of charged dust particles with very high spatial resolution. In addition, all payloads carried instruments to measure densities of positive ions and neutral air also with very high spatial resolution. These high resolution in-situ measurements allow us to derive the Schmidt number for the MSP and positive ions. We focus on the last rocket flight, ECOMA09, where all the instruments produced the best data.