Simulation studies for Superconducting Submillimeter-Wave Limb-Emission Sounder-2 (SMILES-2)

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SMILES-2 is a mission prepared for the next call-for-proposals for JAXA/ISAS M-class scientific satellite mission. It aims at scanning the atmospheric limb from 20 to 160 km above the surface at frequencies near 700 GHz and 2 THz. It could provide the temperature and composition as well as, for the first time, the horizontal wind vector above 30 km, the atomic oxygen in its ground state above 90 km, and the atmospheric density and the geomagnetic field vector near the mesopause. The measurement performances have been assessed from numerical simulations. We will present the results obtained for the 3 radiometers.

Keywords: middle and upper atmosphere, wind, geomagnetic field, atomic oxygen