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COMPARISON OF GPS/SAC-C AND MIPAS/ENVISAT TEMPERATURE PROFILES AND ITS IMPLEMENTATION FOR MLS-AURA OBSERVATIONS

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A new generation GPS flight receiver was launched on the Argentinian satellite SAC-C in 2000. It has demonstrated the potential applicability for the continuous monitoring of the Earth's atmosphere with radio occultation technology, and provide high vertical resolution profiles of temperature and water vapour data complementary to other sounding techniques. MIPAS (the Michelson Interferometer for Passive Atmospheric Sounding) on board of the ENVISAT satellite launched in 2002 provides vertical profiles of temperature and various tracer constituents by limb-emission measurements in the mid-infrared. Both observation systems will benefit from their cross-comparison. This analysis presents preliminary results of the temperatures retrieved from MIPAS/ENVISAT infrared spectrum measurement using the IMK data processor and from GPS/SAC-C radio occultation observations using JPL retrieval software. Both individual profiles and zonal means of the atmospheric state parameter at different seasons and geolocations show reasonable agreement, though some differences exist due to characteristics of the individual instruments and observation scenarios. The same cross comparison technique can help validate the observed temperatures (5-100km) from the AURA MLS instrument, to be launched in January, 2004.

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