

## **Integration and performance of the flight configuration SIR on TELIS**

P. Yagoubov, G. de Lange, R. Hoogeveen

National Institute for Space Research, SRON, the Netherlands

V. Koshelets

Institute of Radio Engineering and Electronics, IREE, Russia

G. Wagner, M. Birk

Institute for Remote Sensing Technology, DLR, Germany

TELIS (Terahertz and submm Limb Sounder) is a three-channel balloon-borne heterodyne spectrometer for atmospheric research.

We present design and experimental results of the 500 - 650 GHz channel. It is based on a phase-locked Superconducting Integrated Receiver (SIR), on-chip combination of a low-noise SIS mixer and a superconducting Flux Flow Oscillator acting as Local Oscillator.

The SIR channel has been thoroughly tested and recently integrated into the TELIS instrument.

We will present experimental results of the completely integrated flight configuration SIR channel, including noise performance, (DSB NT below 300 K), beam pattern, system stability tests and gas cell measurements using flight electronics and backend spectrometer.