



## Polarization and Beaming Properties of the Saturn Kilometric Radiation

Baptiste Cecconi (1), Laurent Lamy (2), Georg Fischer (3), Philippe Zarka (1), Sébastien Hess (4), and Renée Prangé (1)

(1) Observatoire de Paris-Meudon, LESIA, Meudon, France (baptiste.cecconi@obspm.fr), (2) Imperial College, London, UK, (3) Space Research Institute, Austrian Academy of Sciences, Graz, Austria, (4) LASP, University of Colorado, Boulder, Colorado, USA

The SKR (Saturn Kilometric Radiation) is the main radio component at Saturn. Its auroral origin was discovered in the Voyager era and was confirmed and studied in detail with the Cassini/RPWS (Radio and Plasma Wave Science) experiment. The goniopolarimetric (GP) capabilities of the High Frequency Receiver (HFR) enables instantaneously determination the flux, the polarization and the wave vector direction of any observed transverse electromagnetic wave. Provided a magnetic field model and assuming the emission to be emitted close to the local electron cyclotron frequency, one can then localize the SKR sources as well as the apparent beaming pattern of the source, which is the combination of the intrinsic source emission pattern and of propagation effects occurring along the wave path between the source and the observer.

It was discovered recently that the polarization of the SKR changes with observational latitude. We present a statistical investigation of the observed polarization vs latitude and discuss them. We also present an analysis of the associated source beaming pattern. These observed properties will be compared to that of the terrestrial and jovian auroral radio emissions.