



## **AKR modulations controlled by Earth's rotation as observed by STEREO**

M. Panchenko (1), M. L. Khodachenko (1), A.G. Kislyakov (2), H.O. Rucker (1), J. Hanasz (3), P. Zarka (4), M. Kaiser(5)

(1) Space Research Institute, Austrian Academy of Sciences, Graz, Austria (mykhaylo.panchenko@oeaw.ac.at), (2) Lobachevsky State University, Nizhny Novgorod, Russia, (3) Space Research Center PAS, Torun, Poland, (4) Observatoire de Paris, Meudon, France, (5) NASA/Goddard Space Flight Center, USA

Daily variations of the terrestrial Auroral Kilometric Radiation (AKR) are reported. The effect is detected in course of the analysis of STEREO/sWaves data recorded from 1 Feb 2007 to 1 May 2007. It has been found that intensity of the AKR emitted from northern and southern sources has strong periodic modulations with period of  $\sim 24$  hour. It has also been shown that the occurrence frequency of the AKR strongly depends on the orientation of the Earth's magnetic dipole relative to the Sun. The AKR was found to occur more often when the rotating oblique magnetic dipole of the Earth is oriented in the direction opposite to the Sun. Furthermore at this time the AKR is emitted in the broader frequency range, up to  $\sim 400 - 500$  kHz. When the axis of the terrestrial magnetic dipole is oriented towards the Sun the number of AKR events decreases significantly, and the upper frequency limit of the AKR stays below  $\sim 300 - 400$  kHz. This results give us a reason to suppose that the observed  $\sim 24$  h variations of AKR are very likely connected to the terrestrial daily rotation. Physically this phenomenon may be caused by diurnal changes of the plasma frequency in the auroral region.