

## **MAGNETIC FIELD STRUCTURE IN NGC5775 FROM RADIOCONTINUUM POLARIZATION**

R.-J. Dettmar (1), M. Soida (2), M. Urbanik (2) et al.

(1) Ruhr-University Bochum (2) Jagiellonian University Krakow

We present results of a recent radiocontinuum polarization study of the spiral galaxy NGC5775 with regard to its large scale magnetic field structure and discuss the influence of the observed magnetic field on cosmic ray propagation. Our analysis is based on Very Large Array data at 4.85GHz and 1.49GHz. We found that regular magnetic fields extend beyond 2kpc from the mid-plane of the galaxy into the halo and possess a substantial component oriented perpendicular to the plane. In particular, the magnetic field forms X-shaped vertical extensions with a field direction parallel to H<sub>alpha</sub> emitting spurs of ionized gas. The analysis of Faraday rotation between the mentioned frequencies suggests a dipolar magnetic field, in agreement with a rigid rotation curve of NGC~5775 which is implied by our H<sub>alpha</sub> velocity field. We suggest that vertical magnetic field components support the gas and cosmic ray transport along the magnetic lines from the disk into the halo. Magnetic reconnection may also contribute to the heating balance for halo gas.