Polarimetry at the Effelsberg radio telescope

R. Wielebinski, W. Reich, O. Lochner

Max-Planck-Institut für Radioastronomie, Bonn, Germany

Abstract. The measurement of linear polarization of the radio continuum emission at a high radio frequency gives basic information about the magnetic fields in the emission regions. To make such measurements polarimeters are needed that give us the Stokes parameters with great fidelity. Since the continuum intensity falls rapidly at high radio frequencies broad band polarimeters are used. When observations are made at a lower radio frequencies Faraday rotation occurs and hence leads to depolarization. The determination of Rotation Measure can give us information about the Faraday depth in the line of sight and hence about the magnetic field in the line of sight. To make such RM observations, that allow the determination of the Faraday depth, new analogue multi-polarimeter backends were developed for the 100-m Effelsberg radio telescope. These multi-polarimeter backends are implemented in the 21/18cm receiver and will be available in a new 11 cm system. Examples of recent observations with the broad band polarimeters and the multi channel systems will be presented.