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Measuring Magnetic Fields Near and Far via the Zeeman Effect

Dr. Tim Robishaw

Dominion Radio Astrophysical Observatory

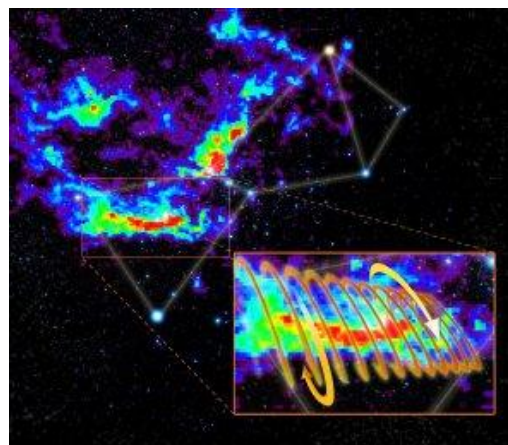


Dr. Robishaw is a Covington Fellow of Dominion Radio Astrophysical Observatory, National Research Council, Canada. He is also the Australian Research Council Super Science Fellow of The University of Sydney. His main research interests

is using the biggest telescopes in the world to investigate the structure of magnetic fields in our own Milky Way galaxy as well as external galaxies. He is also interested in: the interstellar medium of the Milky Way; dwarf galaxies orbiting the Milky Way; and the mysterious high-velocity clouds of neutral hydrogen.

Abstract

The Zeeman effect is the only observational tool that allows us to directly measure the magnetic field strength and direction in the interstellar medium. Faraday rotation is another valuable tool, but the magnetic field strength and direction inferred via rotation measures are integral measurements weighted by the electron density along the line of sight. We discuss previous measurements of the Zeeman effect in Galactic-cm radio emission, some of the instrumental challenges involved in such measurements, and plans for a large-scale survey underway at the Dominion Radio Astrophysical Observatory. We also discuss the first detection of extragalactic Zeeman splitting in the hydroxyl (OH) megamaser emission of starburst galaxies and an ongoing project to measure the magnetic field in the plane of our own Galaxy using Zeeman splitting of OH masers.



All are welcome! Tea, coffee, biscuits will be served at 3:15 P.M.

You are welcome to nominate speakers to Shude Mao (shude.mao@gmail.com), Licai Deng (licai@bao.ac.cn), Xuelei Chen (xuelei@cosmology.bao.ac.cn).