

PHYSICS SEMINAR

Probing Cosmic Magnetic Fields with Faraday Rotation

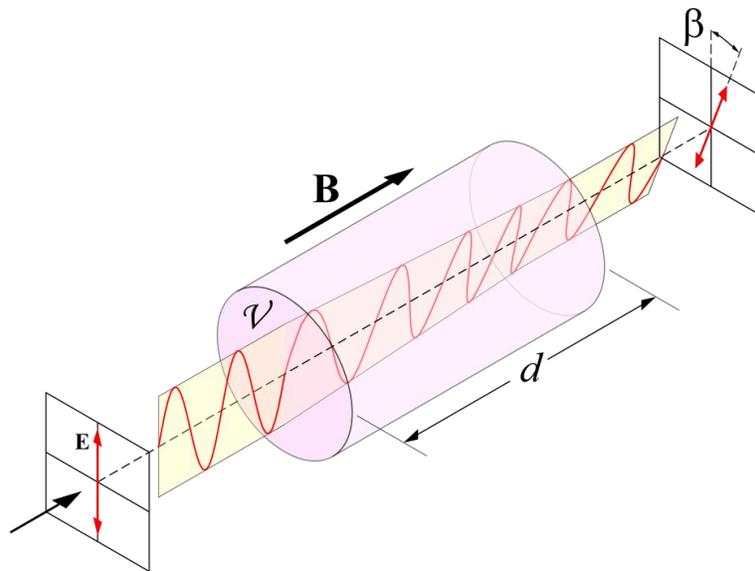
Dr Catherine Whiting

Thursday, February 19, 2026

12:30 – 1:30 p.m.

WS 160

Magnetic fields play a central role in astrophysical plasmas, influencing phenomena from solar activity and coronal heating to star formation, the large-scale structure of galaxies, and the early universe. But, how do we measure these fields from such vast distances? This talk will introduce Faraday Rotation, the rotation of the polarization angle of linearly polarized radio waves as they propagate through a magnetized plasma. The physical origin of this effect will be motivated using concepts from electromagnetism. Some applications of Faraday rotation to probe magnetic field strengths across a wide range of astrophysical scales will be presented. These examples will illustrate how one single physical effect enables a unified approach to study magnetism throughout the universe.



Refreshments!