

CfAR Seminar: Wed 12 Feb 3pm HG22

Ciara Maguire, from the Dublin Institute for Advanced Studies and Trinity College Dublin.

Title: Shock waves in the solar corona

Abstract: The Sun can produce large-scale energetic events such as solar flares and coronal mass ejections (CMEs) which can excite shock waves that propagate from the low solar atmosphere into interplanetary space. Such shocks can result in electron acceleration and intense bursts of radio emission. These accelerated particles can cause a variety of potentially dangerous 'space weather' effects, including damage to ground and space based technologies at Earth. To date, the shock kinematics responsible for particle acceleration and emission at radio wavelengths is poorly understood. This talk will present a variety of methods to determine shock kinematics, allowing us to better understand the evolution of shock properties and how they are related to particle acceleration and radio emission. Identifying the relationship between CME eruption and energetic particle acceleration allows us to better understand how shocks may accelerate particles. A more precise understanding of shock properties is essential for space weather forecasting and subsequent Earth impacts.