

Cockcroft Institute Seminar

Particle acceleration in solar flares and other astrophysical plasmas

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Walton Rooms A & B, The Cockcroft Institute

Abstract

I will briefly review the properties of high energy charged particles in solar flares, and outline some of the theories which have been proposed to explain their origin. The main focus will be on acceleration of charged particles in magnetic reconnection.

Results of recent test particle models for acceleration in reconnecting magnetic fields will be presented. Background electromagnetic fields with 3D magnetic nulls have been studied, as well as time-dependent fields associated with forced magnetic reconnection. Potential applications of particle acceleration by reconnection in other areas of astrophysics will be mentioned.