Particle Acceleration During Solar Reconnection.

Lyndsay Fletcher
Department of Physics and Astronomy, The University of Glasgow, Glasgow G12 8QQ, U.K.

With constantly improving observations, such as those from the Ramaty High Energy Solar Spectroscopic Imager satellite (RHESSI), it is clear that the production of highly non-thermal particles is a ubiquitous feature of the corona, and is intrinsically linked to reconnection in the coronal magnetic field. Solar flares are extreme examples of this process, with the presence of relativistic or mildly relativistic electrons and ions being revealed directly by *in situ* measurements, by X-ray bremsstrahlung and gamma-ray emission, but also in the radio, optical and UV wavelengths. Imaging observations also enable us to map the evolution of the magnetic field in the flare region, and through the various diagnostics available we attempt to link properties of the flare particle distribution to the magnetic changes observed. Particle acceleration is not confined to large events, and seems to also form part of the microflare phenomenon. This talk will also give an overview of what is known about accelerated particle populations under different coronal conditions, what can be deduced from observations, and how the observational demands on particle populations can be reconciled with a reconnection scenario. Particular reference will be made to recent results from RHESSI.