

Solar flare energy transport: 'Waving goodbye' to the standard model?

For decades, the dominant paradigm, or 'standard model' for solar flares is one of magnetic energy conversion in the corona into the non-thermal kinetic energy of electrons and ions and, to a lesser extent, thermal energy of the ambient plasma. The electrons and ions are then supposed to transport energy to the chromosphere, where the dominant flare radiation is formed. Over the last few years, this model has been increasingly put to the test by RHESSI and TRACE observations, and found to be lacking in more than one respect. Therefore various authors have been prompted to look for alternative ways of moving flare energy around the corona and accelerating electrons locally in the chromosphere. In this seminar I will discuss the recent observations which are prompting a re-examination of flare energy transport, and describe one model proposed by Fletcher & Hudson for energy transport by Alfvénic wave pulses, and acceleration in the turbulent structures that they generate.