

*Hinode-3: 3rd Hinode Science Meeting  
Hitotsubashi Memorial Hall, Tokyo  
1-4 December, 2009*

## **Toward a better standard model for solar flares**

P. F. Chen

*Department of Astronomy, Nanjing University, Nanjing 210093, China*

**Abstract.** Multiwavelength observations in the 1960s and 1970s were pieced together to construct the so-called standard reconnection model for two-ribbon flares, which has set up a framework for understanding the flare and the associated mass ejections. As the flare evolution was observed with higher and higher spatiotemporal and spectral resolutions, accumulating new features have been revealed, which are not expected from the standard model. Researchers have collected many features that are apparently in conflict with the standard model, such as the downward motion of the flare loop top and the converging motion of the flare ribbons in the impulsive phase of the solar flare. These new challenging features, however, enable us to improve the standard magnetic reconnection model, which would then become more realistic to the solar atmosphere. In addition, the formation of the CME leading edge was not well addressed in the standard model. It has been illusive whether the leading edge is an erupting flux tube or plasma pileup swept by waves. Recent observational data analysis shed crucial light on the important issue. In this review talk, I will collect the challenging features and comment on how they can be incorporated into the standard model.