WG1: Numerical Models of CME Initiation

A variety of theoretical models have been proposed to explain the initiation of CMEs. Most of the recent models involve a slow buildup of stress in the coronal magnetic field, followed by a sudden release of the stored energy to drive the CME. However, the details of these processes vary significantly between the models. For example, magnetic reconnection is required to drive the eruption in some models, while it is a byproduct of the eruption in other models. We now have an enormous database of CME observations to compare with models, and the prospect of even better observations of the pre-event corona and CMEs from new missions in the next few years. The intent of this session is to elucidate the main features of each model that can be tested against observations, and to devise a 'shootout' based on model predictions for selected events.

Speakers (Tuesday, July 12)

The time allocated for each paper includes 5 minutes for discussion.

09:45 – 10:15 Dana Longcope (Montana State University): Energy Storage and Release in the Corona: The Role of Topology
10:15 – 10:30 Daniel Spicer (NASA/GSFC): A Unified Picture of Coronal Mass Ejections (contributed talk)
10:30 – 10:45 Coffee Break
10:45 – 11:15 Spiro Antiochos (NRL): The Breakout Model for CME Initiation
11:15 – 11:45 Terry Forbes (University of New Hampshire): The Role of Ideal-MHD Processes in CME Initiation
11:45 – 12:15 Jon Linker (SAIC): CME Initiation in a 'Simple' Active Region
12:15 – 12:30 Open Discussion