EP 15: Sun I

Zeit: Donnerstag 17:00–17:45 Raum: AKM

EP 15.1 Do 17:00 AKM

Asymmetric flows in the solar corona — •Hardi Peter — Max-Planck-institut für Sonnensystemkroschung, 37191 Katlenburg-Lindau

The solar corona and the transition region from the chromosphere to the corona are highly dynamic regions. Previous EUV spectra from the transition regions using SUMER/SoHO showed asymmetric line profiles pointing to flows and/or wave broadening in structures intermixed along the line of sight. New observations of hot coronal plasma with EIS/Hinode now reveal the existence of such asymmetries also in hot active regions.

A new combined interpretation of the asymmetric EUV spectra from the transition region and hot corona will be given that will account for the feeding of plasma into the corona, either filling active region loop systems or supplying mass to the solar wind.

Evidence is presented that the actual mass supply to the corona and the find happens in the mid transition region, thus supporting previous studies of the connection of the chromospheric network to the origin of the solar wind.

EP 15.2 Do 17:15 AKM

Fields and flows around 3D reconnection — •Jörg Büchner[1], Jean-Carlo Santos[1], and Antonius Otto[2] — [1]Max-Planck-Institut für Sonnensystemforschung, Max-Planck-Str.2, 37191, Katlenburg-Lindau, Germany — [2]University of Alaska, Fairbanks

The three-dimensional (3D) structure and strength of reconnecion electric fields is not well understood, yet. Using the 3D numerical simulation model LINMOD3d we investigated the situation arising from a multipolar source of magnetic fluxes, typical for solar and stellar magnetic field configurations. We obtained the structure of and strength of fields and flows around the site of 3D reconnection and discuss their consequences for the conversion of magnetic energy into plasma flows and particle acceleration.

EP 15.3 Do 17:30 AKM

Plasmoid/plasmoid and plasmoid/loop-top interactions and particle acceleration in solar flares — •Miroslav Bárta[1,2], Jörg Büchner[1], and Marian Karlický[2] — [1]Max-Planck-Institut für Sonnensystemforschung, D-37191 Katlenburg-Lindau, Germany — [2]Astronomical Institute of Czech Academy of Science, CZ-25165 Ondřejov, Czech Republic

Using the Adaptive-Mesh-Refinement (AMR) MHD numerical model we simulated current-sheet fragmentation in solar flares. The AMR technique allowed us to study processes in the flare current sheet within a larger range of scales. In agreement with the concept of *cascading/fractal reconnection* (Shibata and Tanuma, Earth, Planets, and Space 53, 2001) we found the cascade of mutually interacting magnetic islands (plasmoids) formed on various spatial scales. We would like to demonstrate the importance of mutual plasmoid/plasmoid and plasmoid/loop-top interactions for energy release and particle acceleration in solar flares. We shall show some observable predictions of our simulations and their comparison with observations.