Torsional Motions and Heating in the Disk Counterparts of Spicules

Rouppe van der Voort, Luc (1), rouppe@astro.uio.no; Bart de Pontieu (2,1); Tiago Pereira (1); Mats Carlsson (1); and Viggo Hansteen (1).
(1) University of Oslo, Norway
(2) Lockheed Martin Solar and Astrophysics Laboratory, Palo Alto, CA, USA

Slitjaw images from the Interface Region Imaging Spectrograph (IRIS) reveal the ubiquitous presence of small-scale jets in network regions. Coordinated observations with IRIS and the Swedish Solar Telescope in La Palma show that many of these jets can be associated with so-called Rapid Blue- or Red-shifted Excursions (RBE or RREs) which are the disk-counterparts of type II spicules. We have a large number of RBEs and RREs in our coordinated observations that are covered by the IRIS slit. For these events, we find clear spectral signatures in the Mg II h en k spectral lines. Furthermore, we find associated signatures in the C II 1336 and Si IV 1394/1403 lines. This supports earlier observations that showed that type II spicules are heated to at least transition region temperatures. The combined IRIS and SST observations show that torsional motions on very small (subarcsecond) spatial scales are an important component in the dynamics of spicules.