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Poster

2. Chromospheric heating and dynamics

Dopplershifts in quiescent prominences observed by the IRIS and MSDP spectrographs

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Quiescent solar prominences are generally considered to be stable. However, these prominences consist of a multitude of small-scale structures or threads that are often significantly dynamic. To understand the nature of the plasma dynamics we use the high spatial, temporal and spectral resolution observations obtained by IRIS during coordinated campaign with the MSDP spectrograph at the Meudon Solar Tower. Mg II h and k lines observed by IRIS represent a good diagnostic tool for investigation of the prominence fine structure dynamics, as they are optically thick under the prominence conditions. We will present detailed IRIS observations of Mg II lines, e.g. the Dopplershift, the line width obtained with diferent methods of fitting the profiles (quantile method, gaussian method). We explain significant asymmetries in the observed Mg II spectra by the presence of several threads located along the line of sight with different velocities. In such a case, the decrease of the intensity of individual components of the observed spectra with the distance from the central wavelength can be explained by the Doppler dimming effect. To interpret the observed Mg II profiles in terms of dynamics we use 1D or 2D radiative transfer models including a prominence-corona transition region.