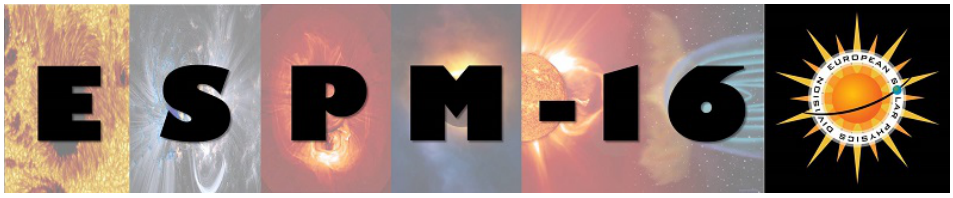

Contribution ID: **345** Type: **Poster**

Discrepancy between ion and neutral Doppler velocities in solar prominence. Among multi-fluid theory and radiative transfer

Wednesday, 8 September 2021 12:18 (13 minutes)

Single fluid MHD theory is not able to fully describe observed plasma motions in solar prominences. Several authors (see Khomenko et al. (2016), Anan et al. (2017), Wiehr et al. (2019)) observed discrepancy between Doppler velocity measured in different spectral lines of ions and neutrals. However they give different answers to the question if motions of the plasma lead to decoupling of ions and neutrals as predicted by multi-fluid theory (see Popescu Braileanu et al.(2021)). In the current research we analysed observations of Doppler velocity in a quiescent solar prominence in 6 spectral lines of ions and neutrals acquired by HSFA-2 spectrograph in Ondrejov Observatory . We found discrepancy between measured Doppler velocity of ions and neutrals as well as between spectral lines of the same species. We found that apart from multi-fluid scenario effects of the radiative transfer should be included in interpretation.

Primary author: ZAPIÓR, Maciej (Astronomical Institute Czech Academy of Sciences)

Co-authors: Prof. HEINZEL, Petr; KHOMENKO, Elena (Instituto de Astrofisica de Canarias)

Presenter: ZAPIÓR, Maciej (Astronomical Institute Czech Academy of Sciences)

Session Classification: Poster Session 6.2

Track Classification: Session 2 - The Solar Atmosphere: Heating, Dynamics and Coupling