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Diagnostics of the off-limb solar corona using EUV and forbidden lines

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We report on diagnostics of the off-limb solar corona using coordinated observations of EUV allowed lines together with the coronal forbidden lines. We show that the electron densities obtained from the Fe XIII line ratios observed by both Hinode/EIS and COMP are in good agreement once the photoexcitation and background subtraction are both accounted for. In addition, the Hinode/EIS observations of Fe XII indicate that the 195.1 Å line has an anomalous width and is likely optically thick. The Fe XII 1349 Å forbidden line observed by IRIS shows enhanced intensities in the active region spectra, but not in the quiet Sun. These observations can be explained by presence of high-energy electrons in active region corona.

Primary author: DUDÍK, Jaroslav (Astronomical Institute of the Czech Academy of Sciences)

Co-authors: MASON, Helen (University of Cambridge); Dr TESTA, Paola (Harvard-Smithsonian Center for Astrophysics); RYBAK, Jan (Astronomical Institute, Slovak Academy of Sciences, Tatranska Lomnica, Slovakia); Dr DZIFCAKOVA, Elena (Astronomical Institute of the Czech Academy of Sciences); Mr LORINCIK, Juraj (Astronomical Institute of the Czech Academy of Sciences); DEL ZANNA, Giulio (University of Cambridge (UK)); Dr POLITO, Vanessa (Bay Area Environmental Research Institute)

Presenter: DUDÍK, Jaroslav (Astronomical Institute of the Czech Academy of Sciences)

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