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ELECTRON DENSITY MEASUREMENTS OF SOLAR FLARE PLASMAS USING LINE RATIO TECHNIQUES

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Using high-resolution and high-quality spectra observed by nowadays satellites, data covering a very large wavelength range is now possible.

Solar flares are considered as increases in the luminosity of the Sun due to changes in the temperature and density of the coronal plasma.

Line intensity and widths and shifts and profiles of spectral lines are good tools for diagnostic studies.

Accurate atomic data are required to interpret the UV and X-ray spectra of solar flare plasmas. Precise atomic data and computations are necessary in diagnosing solar plasma and understanding their structure.

Line intensities ratio show strong dependence on the electron temperature and density in plasmas.

Atomic data needed to compute line intensities are energy levels, radiative transition probabilities and collision strengths. We used in this work the top of art data to estimate the electron density of solar flares.

The theoretical intensity ratios have been calculated using the statistical equilibrium code of Dufton (Comp. Phys. Comm., **13**, 25, 1977) and the line intensity ratios have been fitted using a formula by Feldman et al. (Astrophys. J., **679**, 843, 2008).