

Spectral line intensity ratios as a diagnostic of plasma geometry

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Presented is an analysis of radiative transfer effects present in solar and stellar coronal plasmas, the angular dependence of which is found to fully explain previously calculated but poorly understood line radiation intensity enhancement above the optically thin limit. This gives both a reason for the indeterminate status of opacity in relation to the coronal lines of distant stellar sources --- hence potentially solving an important problem in astrophysics --- and the chance to derive geometric information from the spectrum of a spatially unresolvable stellar source. The possibility of observing such opacity enhancement effects in the coronae of laser-plasmas will be discussed in the context of planned new experiments.