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[*Invited Lecture*]

Application of Stark broadening in astrophysics and space sciences

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Abstract: We will present a part of our recent calculated results for Stark broadening parameters of spectral lines. Semiclassical perturbation theory in collisional approach of Sahal-Bréchet and developed further is used. Plasma conditions of interest cover a wide range of temperatures and particle densities, and they are applicable for the interpretation and analysis of stellar spectra. A demonstration of Stark broadening influence on the spectral lines in stellar spectra will be given.