Short talk

MEASURED STARK SHIFTS OF Kr I LINE PROFILES IN THE 5s-5p AND 5s-5p' TRANSITIONS

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On the basis of the precisely recorded 10 neutral krypton (Kr I) line shapes in the 5s–5p and 5s–5p' transitions, it has been obtained the Stark shift (d) of the neutral krypton (Kr I) spectral lines. These lines have been studied in a linear, low–pressure, optically thin pulsed arc discharge operated in pure krypton. The line shapes are measured at 17 000 K electron temperature (T) and at 16.5x10^{22} m^{-3} electron density (N). The mentioned plasma parameters have been measured using independent experimental diagnostics techniques, as well as from the line deconvolution procedure. The separate electron and ion contributions from the total Stark shift (d_t), i.e. d_e and d_i have been obtained and represent the first experimental data in this field.

On the basis of the observed asymmetry of the Stark broadened line profile it has been deduced the ion broadening parameters which describe the influence of the ion static (A) and the ion–dynamical effect on the shift (E) of these 10 Kr I line shapes. The ion–dynamical parameters of the measured Kr I line shape are the first data in this field, too.

Short talk

THE STARK BROADENING EFFECT IN HOT STAR ATMOSPHERES: Tl II

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Electron-impact broadening is the main pressure broadening mechanism in the hot star atmospheres. Satellite ultraviolet spectral lines observations made by e.g. International Ultraviolet Explorer (IUE) and Goddard High Resolution Spectrograph (GHSR) installed at Hubble Space Telescope provided much better possibilities for the investigations of the trace elements spectral line in stellar atmospheres. Consequently, Stark broadening parameters data for such lines become of interest for stellar spectra interpretation, analysis and modelling as well as for abundance determination.

In order to provide the needed spectroscopic data for singly ionized Thallium spectral lines we present Stark broadening parameters for Tl II spectral lines calculated within the modified semiempirical approach. Calculations were performed within temperature range 5000K-50000K and for an electron density of $10^{23}m^{-3}$.