THE STARK-B DATABASE FOR SPECTRAL LINE BROADENING BY COLLISIONS WITH CHARGED PARTICLES

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Stark broadening theories and calculations have been extensively developed for about 50 years. Accurate spectroscopic diagnostics and modelling require the knowledge of numerous collisional line profiles.

Nowadays, the access to such data via an on line database becomes essential. The aim of STARK-B [1] is to reply to this need. It is a collaborative project between the Astronomical Observatory of Belgrade and the Observatory of Paris (LERMA). STARK-B is a database of widths and shifts of isolated lines of atoms and ions due to electron and ion collisions that we have calculated within the semiclassical impact perturbation theory and published in international refereed journals (more than 150 papers). It is devoted to modelling and spectroscopic diagnostics of stellar atmospheres and envelopes, laboratory plasmas, laser equipments and technological plasmas. Hence, the domain of temperatures and densities covered by the tables is wide and depends on the ionization degree of the considered ion. STARK-B has been fully opened since September 2008. Due to the considerable growing in the recent past years of spectral resolution, sensitivity, large ground-based telescopes and space-born missions, new data requests are increasing. So the database is very lively and we continue to feed it with new calculations.

STARK-B is a part of VAMDC (Virtual Atomic and Molecular Data Centre) [2] [3]. We will present STARK-B and its VAMDC context at the Workshop.

References

[1]STARK-B: http://stark-b.obspm.fr
[2]VAMDC: http://www.vamdc.eu
[3] Dubernet, M. L., Boudon, V., Culhane, J. L., et al.: 2010, *JQSRT*, **111**, 2151.