REVIEW OF THE FIRST SLSP CODE COMPARISON WORKSHOP

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Line-shape analysis is one of the most important tools for diagnostics of both laboratory and space plasmas [1]. Evidently, its reliable implementation requires sufficiently accurate calculations. The Stark broadening is the most computationally challenging contribution, with other factors (such as the Zeeman and Doppler effects) further complicating the calculations. Therefore, except for limiting cases, line-shape calculations imply a usage of computer codes of varying complexity and requirements of computational resources. There exist several such codes and, necessarily, limits of applicability, accuracy, and in the end, results, differ from one to another. However, studies comparing different computational and analytical methods are almost nonexistent. The 1st Spectral Line Shapes in Plasma (SLSP) code comparison workshop [2] intended to fill this gap. The organization of the meeting was modeled after the very successful series of NLTE workshops running since mid 1990's [3] (and which in turn were inspired by the Opacity Workshops, initiated in the late 1980's [4]), where a detailed comparison of results for a preselected set of standardized case problems was carried out and analyzed.

In this talk, a general review of the SLSP workshop will be presented, focusing on motivation for the case problems chosen, and followed by discussion of selected results.

References

[1] Griem, H. R.: 1997, Principles of Plasma Spectroscopy (Cambridge University Press).

[2] 1st Spectral Line Shapes in Plasmas code comparison workshop, Vienna, Austria, April 2-5 2012.

[3] Lee, R. W., Nash, J. K. and Ralchenko, Y.: 1997, *Review of the NLTE kinetics code workshop, J. Quant. Spectr. Rad. Transfer*, **58**, 737-742.

[4] Rose, S. J.: 1994, *A review of Opacity workshops, J. Quant. Spectr. Rad. Transfer*, **51**, 317-318.