The role of configuration interaction in the LTE opacity of Fe[1]

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— The Los Alamos National Laboratory code ATOMIC [1] has been recently used to generate a series of local-thermodynamic-equilibrium (LTE) light element opacities for the elements H through Ne [2]. Our calculations, which include fine-structure detail, represent a systematic improvement over previous Los Alamos opacity calculations using the LEDCOP legacy code [3]. Recent efforts have resulted in comprehensive new calculations of the opacity of Fe. In this presentation we explore the role of configuration interaction (CI) in the Fe opacity, and show where CI influences the monochromatic opacity [4]. We present such comparisons for conditions of astrophysical interest.

[1] N. H. Magee et al, *14th Topical Conference on Atomic Processes in Plasmas*, Eds: J. S. Cohen, S. Mazevet, and D. P. Kilcrease, (New York: AIP), pp 168-179 (2004). [2] J. Colgan et al, ICAMDATA Proceedings, (2013). [3] N. H. Magee et al, *Astronomical Society of the Pacific Conference Series* **78**, 51 (1995). [4] J. Colgan et al, High Energy Density Physics, in preparation (2013).

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