Calculation of Radiative Properties of Hot Dense Plasmas

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Radiative Properties

- Astrophysics , Magnetic Confinement Fusion(MCF), Inertial Confinement Fusion
- To study radiative opacity of plasmas
- Radiative atomic data(Energy Levels, oscillator strength,transition rates, photoionizatio and its inverse process i.e. RR)
- Collisional Atomic data(Electron impact excitation, electron impact ionization and their inverse processes
- Line Profile (Voigt and Electron-impact broadening)

Some Sophisticated Atomic Codes

- GRASP2 code (partly improved by us)

  (M A Bari et al, J. Phs. B,44,225004,2011)

- FAC and HULLAC on Collaboration Basis

- GRASP 0-10.10 included in DARC code(electron-impact broadening)

(RQM calculations of electron impact broadening for spectral lines in Be-like Ions Astronomy & Astrophysics in 2012)

Plasma Opacity Atomic Models

- LTE Plasma opacity models

Saha-Boltzman Equation for DLA

- Thomas Fermi statistical model for average charge state
- Non-LTE Collisioanal Radiative Model(CRM)

- we have developed a three-ion CRM model to simulate Non-LTE emission and absorption spectrum

Much Thanks