

Status report on the LXCat project

The LXCat team¹

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The LXCat project (www.LXCat.laplace.univ-tlse.fr) [1] is an open-access website for exchanging data related to electron scattering and transport in cold, neutral gases, critically important to modeling low temperature plasmas [2], by using Boltzmann or Monte Carlo codes.

In this contribution, we will present an update on the status of the LXCat project, whose focus in 2011 was on the critical compilation of electron cross sections and swarm parameters for the rare gases and in 2012 is on the compilation and evaluation of data for common atmospheric gases. At present, 14 databases, contributed by groups around the world can be accessed on LXCat, with several others under development. On-line tools enable importing and exporting data, plotting and comparing different sets of data, and for downloading data. In cases where complete sets of cross sections are available, the conversion to electron transport and rate coefficients can be accomplished with online or downloadable tools, including the Boltzmann equation solver, BOLSIG+. Databases of experimental swarm parameters are also available on LXCat and comparisons of calculated and measured swarm parameters can be done on-line. The LXCat was developed in parallel with a second website ICECat (www.icecat.laplace.univ-tlse.fr), devoted to ion-neutral cross sections, interaction potentials and ion transport parameters in neutral gases.

Anyone willing to contribute to this project is welcome to take part.

References

[1] lxcat.info@gmail.com

[2] S. Pancheshnyi, S. Biagi, M.C. Bordage, G.J.M. Hagelaar, W.L. Morgan, A.V. Phelps, and L.C. Pitchford, *Chemical Physics* (2011) doi:10.1016/j.chemphys.2011.04.020A