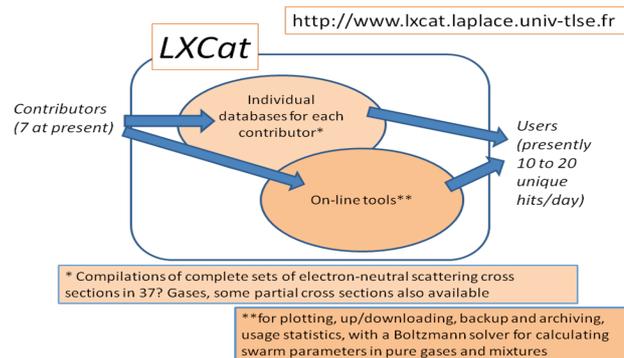




LXCat is a dynamic, open-access, website for collecting, displaying, and downloading **ELEC**tron **SCAT**tering cross sections and swarm parameters (mobility, diffusion coefficient, reaction rates, etc.) required for modeling low temperature plasmas. LXCat is part of a larger, community-wide effort aimed at collecting, evaluating, and sharing data relevant to modeling low temperature plasmas.

- Contributors set up individual databases, and the available databases, indicated by the contributor's chosen title, include primarily complete sets of electron-neutral scattering cross sections, although the option for introducing partial sets of cross sections exists. On-line tools include options for browsing, plotting, and downloading cross section data.



- The electron energy distribution functions (edfs) in low temperature plasmas are in general non-Maxwellian, and LXCat provides an option for on-line calculations of edfs using BOLSIG+, a solver for the electron Boltzmann equation in the two-term approximation. Thus, the user can obtain electron transport and rate coefficients (averages over the eedfs) in pure gases or gas mixtures over a range of values of the reduced electric fields strength, E/N , the ratio of the electric field strength to the neutral density, using cross sections from the available databases.

New contributors are welcome and anyone wishing to create a new database and upload data can request a username and password.

The website is based on a modern LAMP system (Linux, Apache, MySQL, PHP) with an automatic backup and can be accessed at <http://www.lxcat.laplace.univ-tlse.fr>. Archived versions of the cross section data can be obtained on request. LXCat was designed to be continuously upgradable and users are encouraged to check back regularly for information on new features on the site and updates in the data.

This project was started in 2008 by researchers at LAPLACE, Laboratoire des Plasmas et Conversion d'Énergie, a laboratory operated jointly by the CNRS, the University of Toulouse and the Institut Polytechnique of Toulouse.

Hardware for this project was purchased in 2009 through support from the Réseau Plasmas Froids.

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DO NOT FORGET TO MAKE PROPER REFERENCE TO DATABASE(S) USED

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