

ACol – Database for collisional processes

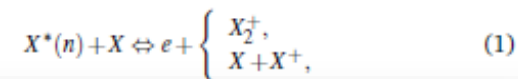
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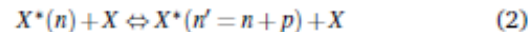
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As noted ACol comprises the rate coefficients for the collisional processes of excitation/deexcitation and ionization/recombination in hydrogen, helium, and alkali plasmas. The ACol database is now in development. The dataset may be useful for studying and simulating LTP in the lab as well as weakly ionized layers in various atmospheres, etc. Moreover the existence and development of the ACol database/node might be crucial for diagnostics and modeling of LTPs which are used for the bio/chemistry and food industry⁹³⁻⁹⁵. The ACol database is composed of collisional data for excitation/deexcitation and ionization/recombination processes.

The database is made up of collisional ionization/recombination



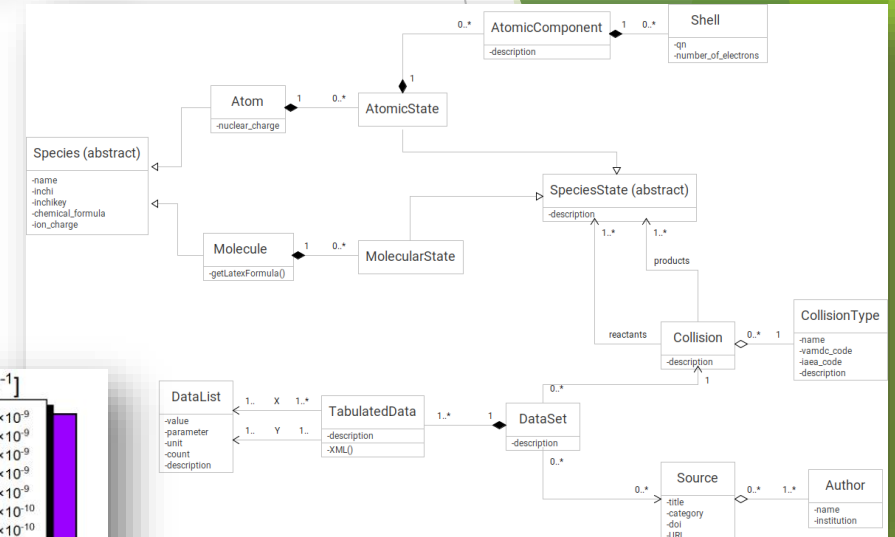
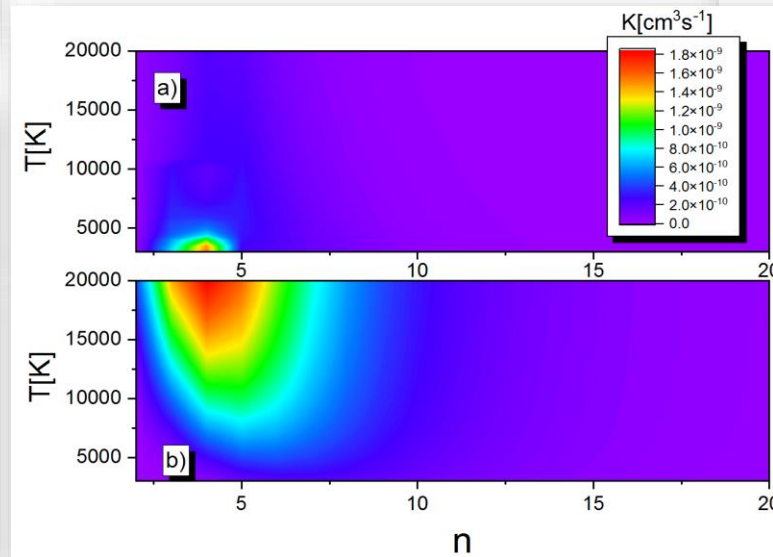
and excitation/deexcitation



data obtained at the IPB. Here X , X^+ are atoms and their ions in the ground states, $X^*(n)$ are the Rydberg atoms (RA), and X_2^+ their molecular ions. The above mentioned processes are such that system goes through the phase where its parts can be described as a collisional quasi-molecular ion-atom complex.

ACol presents cross-sections and rate coefficients for the ionization/recombination and excitation/deexcitation processes for hydrogen, helium and alkali plasmas, for conditions of interest in the laboratory, in astrochemistry and in LTPs. The results were

The ACol database is hosted by SerVO servo.aob.rs/acol/. The queries are hosted locally on the website which also deliver data in XSAMS format defined by VAMDC³³ (servo.aob.rs/acol/) via AJAX-enabled web page. On-site, we included an additional col-



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