

MOL-D DATABASE FOR MOLECULAR COLLISIONAL AND RADIATIVE PROCESSES

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We report the current stage of the MOL-D database and web service within the virtual atomic and molecular data center (VAMDC). It is devoted to modelling of stellar atmospheres, laboratory plasmas, technological plasmas etc. The data for hydrogen are for example important for elaboration of atmosphere models of solar and near solar type stars and for radiative transport consideration as well as for kinetic of stellar and other astrophysical plasmas (Mihajlov *et al.* 2007). The helium data are of interest particularly for helium-rich white dwarf atmospheres investigations. The initial stage of development was done at the end of 2015, since all the existing calculated data for photodissociation cross-sections of hydrogen H_2^+ and helium He_2^+ molecular ions and the corresponding averaged thermal photodissociation cross-sections have now been implemented (Vujčić *et al.* 2015). We are now beginning the second stage of the development of MOL-D. At the moment we are including new cross-section and rate coefficients data about processes which involve species such as HeH^+ , LiH^+ , NaH^+ , SiH^+ which are important for the exploring of the interstellar medium as well as for the early Universe chemistry and for the modeling of stellar and solar atmospheres.

References

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