

MOL-D A COLLISIONAL DATABASE REPOSITORY AND WEB SERVICE WITHIN THE VIRTUAL ATOMIC AND MOLECULAR DATA CENTER

**D. Jevremović¹, A. A. Mihajlov², V. A. Srećković², Lj. M. Ignjatović²,
M. S. Dimitrijević¹ and V. Vujčić^{1,3}**

¹*Astronomical Observatory, Volgina 7, 11060 Belgrade 38, Serbia*

²*Institute of Physics, Belgrade University, Pregrevica 118, Zemun,
11080 Belgrade, Serbia*

³*Faculty of Organizational Sciences, University of Belgrade*

E-mail: darko@aob.rs, vlada@ipb.ac.rs

We present a report on the development of the Belgrade MOL-D database a repository of cross-sections and rate coefficients for specific collisional processes and a web service within the Virtual Atomic and Molecular Data Center (VAMDC, <http://www.vamdc.org>) and the Serbian Virtual Observatory (SerVO, <http://servo.aob.rs>). MOL-D database covers photo-dissociation cross-sections for the individual ro-vibrational states of the diatomic molecular ions and rate coefficients for the atom-Rydberg atom chemi-ionization and inverse electron-ion-atom chemi-recombination processes. For the moment it contains data for photodissociation cross-sections of hydrogen H_2^+ and helium He_2^+ molecular ions and the corresponding average thermal photodissociation cross-sections for the relevant temperature range. The importance of such data is highlighted by its use in hydrogen and helium laboratory plasmas research as well as for elaboration of atmosphere models of solar, near solar type stars and helium-rich white dwarf atmospheres. The MOL-D database is e-service making more available to scientific community our results of the investigation of above described collisions processes and this database can be accessed directly at <http://servo.aob.rs/mold> or through VAMDC portal.