Integrations of satellite and ground-based observations and multi-disciplinarity in research and prediction of different types of hazards in Solar system

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Poster

ELECTRON-IMPACT CROSS SECTIONS FOR THOLINS: COVERAGE WITHIN BEAMDB DATABASE

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Name *Thiolin* has been coined by Sagan and Kare (1976) in order to represent a number of complex organic molecules and polymers that are formed in mixtures of gases with verious hydrocarbons and compounds with nitrogen and sulphor, which at the end in the interactions with UV ligth and discharges are composing the redish and hazy aerosols in the atmospheres of Solar System planets and moons. These kinds of molecules have been observed for example by The Cassini Mission in Titan athmosphere (Dubois et al., 2019; Hörst, 2017) or by The Rosetta Mission in comet 67P/Churyumov-Gerasimenko (Marinković, Bredehöft, Vujčić, Jevremović, & Mason, 2017; Pommerol et al., 2015).

Here, we concentrate on the coverage of ionization cross sections for molecular ions in BEAMDB database and thier importance in analyses of satellite and ground-based observations, as well as multi-disciplinarity in research and prediction of different models of atmospheric phenomena in Solar system. BEAMDB database is hosted at the Serbian Virtual Observatory and is devoted to electron collisional processes. It maintains cross sections (differential, integral, toatal) and electron spectroscopical data such as electron energy loss spectra and threshold spectra (Marinković et al., 2019). The examples of ionization cross sections are those published for $C_2H_2^+$ (see Fig. 1) and $C_2D_2^+$ ions (Cherkani-Hassani et al., 2010) and for OH^+ and OD^+ ions (Belić et al., 2012).

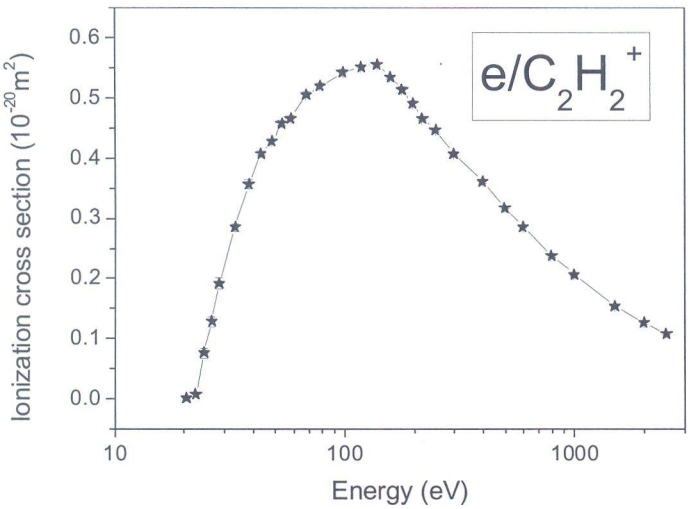

Figure 1. Electron-impact single ionization cross section for $C_2H_2^+$ ions (Cherkani-Hassani et al., 2010)

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Electron-impact cross sections for tholins: Coverage within BEAMDB database

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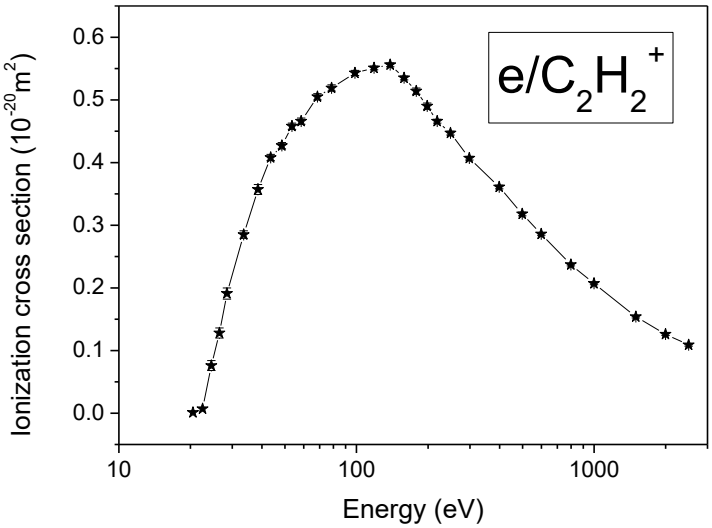

Fig.1. Electron-impact single ionization cross section for $C_2H_2^+$ ions (Cherkani-Hassani et al., 2010)

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