

Abstract Submitted  
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**Influence of cross section set on the self-consistent electron and vibrational kinetics**<sup>1</sup> GIANPIERO COLONNA, MARIO CAPITELLI, CNR-IMIP Bari, CNR-IMIP BARI TEAM — Advanced models of elementary processes in plasmas are based on the self-consistent approach, solving at the same time the Boltzmann equation for free electrons and the master equation for the evolution of species concentration and the distribution of internal state. In some conditions, it is very important also to couple these models with the radiation transport, to consider non-local effects, because the radiation emitted in one location can be absorbed in a different position. This aspects is very important in high pressure, conditions met in high pressure pulsed discharges. The new set of e-molecule cross sections, extend the available data, considering processes for the whole vibrational ladder, has dramatic effects on the kinetics, increasing considerably the energy injected in internal degrees of freedom. This work is intended to investigate such effects, comparing results obtained by using old cross section set or recently calculated complete set.

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