Abstract Submitted
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**Electron-impact excitation and recombination of molecular cations in edge fusion plasma: application to H2+and BeD+** NICOLINA POP[1], Department of Fundamental of Physics for Engineers, Politehnica University Timisoara, Romania, FELIX IACOB, Physics Faculty, West University of Timioara, Timioara, Romania, ZSOLT MEZEI, Laboratoire Aime Cotton, CNRS, ENS Cachan and Univ. Paris-Sud, Orsay, France, OUSMANOU MOTAPON, Department of Physics, Faculty of Sciences, University of Douala, Cameroon, SEBASTIEN NIYONZIMA, Department of Physics, Faculty of Sciences, University of Burundi, Bujumbura, Burundi, IOAN SCHNEIDER, Laboratoire Ondes et Milieux Complexes, CNRS, Univ. du Havre, France — Dissociative recombination, ro-vibrational excitation and dissociative excitation of molecular cations with electrons are major elementary process in the kinetics and in the energy balance of astrophysically-relevant ionized media (supernovae, interstellar molecular clouds, planetary ionospheres, early Universe), in edge fusion and in many other cold media of technological interest. For the fusion plasma edge, extensive cross sections and rate coefficients have been produced for reactions induced on HD+, H2+ and BeD+ using the Multichannel Quantum Defect Theory (MQDT). Our calculations resulted in good agreement with the CRYRING (Stockholm) and TSR (Heidelberg) magnetic storage ring results, and our approach is permanently improved in order to face the new generation of electrostatic storage rings, as CSR (Heidelberg) and DESIREE (Stockholm).

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