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**Open-source Framework for Storing and Manipulation of Plasma Chemical Reaction Data** T. G. JENKINS, S. N. AVERKIN, J. R. CARY, S. E. KRUGER, Tech-X Corporation — We present a new open-source framework for storage and manipulation of plasma chemical reaction data that has emerged from our in-house project MUNCHKIN. This framework consists of python scripts and C++ programs. It stores data in an SQL data base for fast retrieval and manipulation. For example, it is possible to fit cross-section data into most widely used analytical expressions, calculate reaction rates for Maxwellian distribution functions of colliding particles, and fit them into different analytical expressions. Another important feature of this framework is the ability to calculate transport properties based on the cross-section data and supplied distribution functions. In addition, this framework allows the export of chemical reaction descriptions in LaTeX format for ease of inclusion in scientific papers. With the help of this framework it is possible to generate corresponding VSim (Particle-In-Cell simulation code) and USim (unstructured multi-fluid code) input blocks with appropriate cross-sections.

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