

ELECTRON-IMPACT IONIZATION OF ATOMIC IONS IN THE Na ISOELECTRONIC SEQUENCE¹

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A database is assembled which contains electron-impact ionization rate coefficients for selected atomic ions in the Na isoelectronic sequence. The rate coefficients are obtained from a Maxwellian convolution of distorted-wave cross sections which include direct ionization of the 2p and 3s subshells, as well as inner-shell excitations from the 2p and 2p subshells leading to autoionization. These excitation-autoionization contributions can be large for many Na-like atomic ions. To assist modeling efforts of moderately dense plasmas, the rate coefficients are resolved as to the final state of the ionization process. A sample database file is presented for Fe¹⁵⁺. The complete database will reside in electronic form at the Controlled Fusion Atomic Data Center at ORNL (http://www-cfadc.phy.ornl.gov/data_and_codes/).

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1. Abstract of published paper: *Physica Scripta* **57**, 514 (1998).
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