

Precision measurements on dielectronic recombination rate coefficients and state-resolved cross sections relevant to fusion plasmas

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In this presentation, I report on the experimental setup improvement and the achieved resolution of the experimental setups, leading to the (n,l) resolved charge exchange cross section measurements. Then, I summarized the experimental results on dielectronic recombination processes and charge exchange processes respectively. The obtained experimental data on the absolute dielectronic recombination rate coefficients and plasma rate coefficients include the ionic system of Ar^{15+} (Li-like), Ar^{14+} (Be-like), Ca^{11+} (C-like), and Kr^{25+} (Na-like). The obtained experimental data on the (n,l) state-resolved single electron capture cross sections include the collision system of Ne^{8+} , C^{4+} and O^{6+} on He/H_2 . Part of the measured data have been compiled and published in the peer-reviewed journals. The data of ion species relevant to this CRP will be measured.