



Beitrag ID: 8

Typ: Poster

Rate Coefficients for Dielectronic Recombination of the Astrophysically Relevant N-Like Ne Ion at CRYRING@ESR

Donnerstag, 22. Januar 2026 18:20 (20 Minuten)

Dielectronic recombination of N-like Ne was studied using a merged-beams setup at CRYRING@ESR for collision energies from 0 to 25 eV. The measured energy-dependent recombination rate coefficient includes all $\Delta N=0$ DR resonances from 2s to 2p core excitations was compared with results from theoretical calculations. The ion beam contained roughly equal fractions of ions in the ground-state and in metastable states, therefore the theoretical rates were weighted accordingly. From the measurements we derived a DR plasma rate coefficient $\alpha(T)$. The results agree well with previous theory for high temperatures where N-like Ne is abundant, but yield slightly higher rates at the lower temperatures typical of photoionized plasmas and collisionally ionized plasmas. Parametrized fits of the experimental DR plasma rates are provided for use in astrophysical models.

Autoren: HANU, Elena-Oana (GSI Helmholtzzentrum für Schwerionenforschung GmbH(GSI)); LESTINSKY, M.; MENZ, E. B.; BRANDAU, C.; FOGLE, M.; HILLENBRAND, P.-M.; LOOSHORN, M.; SCHIPPERS, S.; SCHUCH, R.; TATSCH, M.; UEBERHOLTZ, K.; WANG, S.X.; STOEHLKER, T.

Vortragende(r): HANU, Elena-Oana (GSI Helmholtzzentrum für Schwerionenforschung GmbH(GSI))

Sitzung Einordnung: Poster Session