

Polarization effects in the ionization cross section for collisions of $\text{Ne}^{**}\{(2p)5(3p);J = 3\}$ with Ar : a sensitive probe for "locking" phenomena [Errata, Phys.Rev.Lett., 62,2369(1989)]

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 ERRATA

Polarization Effects in the Ionization Cross Section for Collisions of $\text{Ne}^{}\{(2p)^5(3p); J=3\}$ with Ar:
A Sensitive Probe for "Locking" Phenomena
[Phys. Rev. Lett. 62, 2369 (1989)]**

J. P. J. Driessen, F. J. M. van de Weijer, M. J. Zonneveld, L. M. T. Somers, M. F. M. Janssens,
H. C. W. Beijerinck, and B. J. Verhaar

In our Letter we presented polarization-dependent cross-section results for $\text{Ne}^{**}\{(2p)^5(3p); J=3\}$ -Ar in a broad energy range. The energy dependence of the polarization effect is a sensitive probe for "locking phenomena." A simple locking criterion is introduced, which has a wide range of possible applications. A detailed discussion of this locking model is presented by Driessen *et al.*¹

For the ionization width $\Gamma(R)$ we introduced a two-state basis, by taking into account only one electron, going into the $\text{Ne}(2p)^{-1}$ hole. This simple model is sufficient to describe the polarization effect, but cannot describe final-state, fine-structure branching ratios, as discussed previously by Bussert and co-workers.² For this detailed information a more extensive model is required,² as proposed by Morgner.³ In this latter model the number of free parameters is considerably larger, but was restricted to five significant transition amplitudes by Bussert and co-workers² in a least-squares analysis of their $\text{Ne}^{**}(2p_x + \text{Ar})$ total ionization cross sections and Ar^+ fine-structure branching ratios, measured for eight $\text{Ne}^{**}(2p_x, x=2,4-10)$ states. We have performed a theoretical analysis using the Feshbach-projection formalism to calculate the ionization amplitudes. Basically this analysis contains the same parameters as the model of Bussert and co-workers.² We find a set of seven significant matrix elements that are in slight but distinct disagreement with Bussert's empirical values. A detailed comparison of these two extended models is described by Driessen *et al.*⁴

Lastly, Eq. (4) should read

$$\Gamma^\Omega = g_\pi^\Omega \Gamma_\pi + (1 - g_\pi^\Omega) \Gamma_\sigma.$$

¹J. P. J. Driessen, F. J. M. van de Weijer, M. J. Zonneveld, L. M. T. Somers, M. F. M. Janssens, H. C. W. Beijerinck, and B. J. Verhaar (to be published).

²W. Bussert, T. Bregel, R. J. Allan, M.-W. Ruf, and H. Hotop, Z. Phys. A **320**, 105 (1985); W. Bussert, T. Bregel, J. Ganz, K. Harth, A. Siegel, M.-W. Ruf, H. Hotop, and H. Morgner, J. Phys. (Paris), Colloq. **46**, C1-199 (1985).

³H. Morgner, J. Phys. B **18**, 251 (1985).

⁴J. P. J. Driessen, S. S. op de Beek, L. M. T. Somers, H. C. W. Beijerinck, and B. J. Verhaar (to be published).