

Abstract Submitted  
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**PCI effects in electron-impact excitation of the  $(3p^5 4s^2)^2P_J$  levels in potassium.**<sup>1</sup> V. BOROVIK, E. REMETA, A.A. BOROVIK, Institute of Electron Physics, Uzhgorod, Ukraine, OLEG ZATSARINNY, KLAUS BARTSCHAT, Drake University — We report preliminary results for the PCI lineshift in ejected-electron spectra corresponding to the decay of the  $(3p^5 4s^2)^2P_{3/2,1/2}$  autoionizing levels in potassium atoms. The spectra were measured precisely for impact energies up to 7 eV above the corresponding excitation thresholds. The energy dependencies of the lineshift were fitted using a semi-classical approach [1], which ignores the potential influence of  $K^-$  resonances. The autoionizing widths for the  $^2P_{3/2}$  and  $^2P_{1/2}$  levels obtained in this method were, respectively, 16 meV and 26 meV. These values exceed, by approximately a factor of three, previous experimental [2,3] results that were free of PCI effects. Hence this discrepancy may be due to the presence of the strong near-threshold  $K^-$  resonances observed earlier in the excitation functions for the above levels [4]. [1] A. Niehaus, J. Phys. B **10** 1845 (1977). [2] R.D. Hudson and V.L. Carter, J. Opt. Soc. Amer. **57** 1471 (1967). [3] R.D. Driver, J. Phys. B **9** 143 (1976). [4] A.A. Borovik, A.N. Grum-Grzhimailo, K. Bartschat and O. Zatsarinny, J. Phys. B **38** 1081 (2005).

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