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Multiconfiguration Hartree-Fock autoionization calculations near the 3p excitation edge of the transition metals KOFI NUROH, Kent State University — We report electron-impact excitation relative scattering cross sections for the transition metals ^{21}SC through ^{27}Ni near the 3p excitation edge.[1] The first set of calculations is based on the theoretical model of random-phase approximation for core-electron scattering in solids in which only electrostatic interactions are taken into account.[2] The second set of calculations is based on an analysis that hinges on the Bethe-Born approximation[3] in which both electrostatic and magnetic interactions are incorporated. Both sets of calculations show trends in Z that are manifested in available measurements.

[1]K. Nuroh, Phys. Rev. B **77**, 125137 (2008)
[2]K. Nuroh, Phys. Rev. B **70**, 205115 (2004)
[3]K. Nuroh, J. Phys. C **20**, 5305 (1987)

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