

Abstract Submitted
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The Ratio of the Resonance Line to Intercombination Line in Neonlike Ions.¹ D PANCHENKO, VM ANDRIANARIJAONA, Department of Physics, Pacific Union College, Angwin, CA 94508, GV BROWN, N HELL, P BEIERSDORFER, Lawrence Livermore National Laboratory, Livermore, CA 94550 — We present the measurement results of the intensity ratios of astrophysically important $1s^2 2s^2 2p_{1/2}^5 3d_{3/2} \rightarrow 1s^2 2s^2 2p^6$ resonance line to the $1s^2 2s^2 2p_{3/2}^5 3d_{5/2} \rightarrow 1s^2 2s^2 2p^6$ intercombination line for Ne-like Kr^{26+} and Mo^{32+} . The experiment was done at the EBIT-I electron beam ion trap at Lawrence Livermore National Laboratory and utilized an x-ray microcalorimeter. The Mo^{32+} experiment is the highest Z-measurement of such type to date, where the dominant role of the intercombination line, known to increase with Z, puts our measurement firmly into the relativistic regime. Compared to the earlier measurements of ions with lower atomic numbers, the measurement for Mo^{32+} shows much a closer agreement with theory. Our results support the hypothesis that the disagreement should narrow with atomic number. This implies that the disagreement with theory may be confined to the range of atomic numbers where the correlation effects are largest.

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