Abstract Submitted
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**Accurate atomic data for xenon: energy levels, oscillator strengths, and electron collision cross sections**[1] KLAUS BARTSCHAT, OLEG ZATSARINNY, Drake University — We have applied our recently developed fully relativistic Dirac $B$-spline $R$-matrix (DBSR) code [1] to calculate the atomic structure (energy levels and oscillator strengths) as well as electron scattering from xenon atoms. Results from a 31-state close-coupling model for the excitation function of the metastable ($5p^5 6s$) $J = 0, 2$ states show excellent agreement with experiment [2], thereby presenting a significant improvement over the most sophisticated previous Breit-Pauli calculations [3,4]. The same model is currently being used to calculate electron-impact excitation from the metastable $J = 2$ state. The results will be compared with recent experimental data [5] and predictions from other theoretical models [6,7]. Our dataset is an excellent basis for modeling plasma discharges containing xenon.

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