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Generalized Ionization scaling law for high energy ion-aligned elliptic Rydberg hydrogen collisions KEVIN CORNELIUS, Ouachita Baptist Univ, MARC WARD, THOMAS COOPER — The classical trajectory Monte Carlo method was used to calculate electron ionization cross sections involving fully stripped ions of He, C, Ar and Kr colliding with aligned elliptic Rydberg hydrogen for various excited n states. Cross sections from target eccentricities of -0.9 to 0.9 over the energy range 1.21 keV/u and 64 keV/u were used to develop a high energy ionization scaling law as a function of reduced collision speed , initial n state, projectile charge , and eccentricity. Our scaling law accurately predicts all theoretical CTMC cross section values for reduced collisions speeds larger than 2.5q.

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