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2s Electron Loss to the Continuum from Metastable C^{4+}(1s2s, ^{3}S) in C^{4+} Plus Helium Collisions[1] H. ALIABADI, , P. RICHARD, , C.P. BHALLA, J R Macdonald Laboratory, Kansas State University, Manhattan KS 66506, M. GEALY, Concordia College, Morehead, MN 56562 — We have investigated the broad peak at 1200eV in the electron production double differential cross section of 30MeV C^{4+} collisions with a helium target at various laboratory scattering angles. In the present experiment this peak is observed at angles between 15^o and 160^o. A simple model treating the 2s electron of the metastable projectile as elastically scattering from the helium atom predicts an electron loss peak in the observed cross sections. The model which includes the Compton profile of the 2s electron in C^{4+}(1s2s, ^{3}S) predicts the observed cross sections when the metastable fraction is taken into account. The data and comparisons with the model calculations will be presented.

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[X] Prefer Oral Session
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