



Contribution ID: 209

Type: not specified

FULLY DIFFERENTIAL CROSS SECTIONS FOR SINGLE IONIZING 1-MEV P+HE COLLISIONS AT SMALL MOMENTUM TRANSFER

Tuesday, 4 July 2017 16:15 (15 minutes)

We present ultrahigh resolution data on single ionization of helium under impact of 1-MeV protons in comparison with theoretical calculations. Good agreement between theory and experiment is obtained. Three initial trial helium wave functions are employed: a weakly correlated Roothaan-Hartree-Fock function, a simple Silverman-Platas-Matsen function of the configuration interaction family, and a strongly correlated function. Multidimensional singular integrals which defining differential cross sections are calculated using special transform for each above trial function.

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Session Classification: Physical processes modeling and related computational methods (II)