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# Using the first-order Born-Faddeev approximation in ionization channel

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**Abstract**

In the present work, the triple and double differential cross sections of atomic hydrogen ionization in the collision with protons at intermediate and high energy ranges are calculated. Interaction potentials are considered as the Coulomb form and the calculations of the triple differential cross section are performed entirely analytically by using the first-order Born-Faddeev approximation. The triple differential cross sections at different energies and momentum transfers are compared with the first Born approximation results. Finally, the results of the double differential cross section are obtained by this approximation and then compared with the experimental and available theoretical results.

**Keywords:** ionization, Born-Faddeev approximation, triple (fully) differential cross section

For full article, refer to the Persian section