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Resonances in electron scattering by molecules

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Abstract content

The methods of the quantum theory few-body scattering based on the Faddeev-Yakubovsky equations [1] in momentum and configuration space are present [1,2].
Scattering states properties of three-body resonantly interacting particles are considered and are shown to be independent of a form of two-body forces, being determined only presence of resonances. The resonances produce an effective long range interaction between three particles [3].
This methods are applied to the calculation of the dissociative electron attachment to hydrogen and hydrogen-halide diatomic initial rovibrational exiting molecules H 2 , N 2 , Li 2 , Na 2 , HCl, DCl, HBr, DBr, HJ, DJ, HF, DF.
The results of this calculations are compered with available experimental data [5] and other calculation [2-4].

References

[1] L.D.Faddeev end S.P.Merkuriev Quantum scattering theory for several particles systems, 1983 Kluwer, London, 399 p.
[2] S.Pozdneev, J.Rus.Las.Res., 2017, v.38, N 3, p.207
[3] Efimov V Nucl.Phys.,1981, A362, p.45; 1982, A378, p. 581,; Phys.Rev.,1993, C47, p. 1876; Vugalter S.A., Zislin G.M. Dokl AN USSR, 1982, v.267, p.784.
[4] S.Pozdneev, J.Rus.Las.Res., 2017, v.38,n5, p.110.
[5] G.J.Schultz, Rev.Mod.Phys., 1973, v.45, p.423.