An analytical potential function for stable diatomic molecules

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Abstract

We propose an analytical five-parameter potential function for stable diatomic molecules V(x) = K/x(3) - e(-tx)(a + bx + cx(2)). Here x=r/r(e), where r is the internuclear distance and re the equilibrium bond length. K, t, a, b, c are five parameters of the function, which are obtained from molecular spectroscopic data in terms of known molecular constants. (C) 2012 Physics Essays Publication. [DOI: 10.4006/0836-1398-25.4.540]

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