Atomic Stability as Result of Electrodynamic Stability Condition

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— According to [1] an electron $e^-$ is formed of an oscillatory massless charge $-e$ in general also traveling at velocity $v$, and the resulting electromagnetic waves of angular frequency $\omega^j$, $j = \uparrow$ and $\downarrow$ for generated in $+v$ and $-v$ directions. The wave energy $\hbar \sqrt{\omega^j \omega^\downarrow}$ equals the charge oscillation energy $\varepsilon_q$ (with the $v = 0$ portion) endowed at the charge’s creation; $\varepsilon_q/c^2$ gives the electron mass $m_e$, $c$ the wave speed. For an atomic orbiting electron, the charge’s $v$ motion is along a circular (or projected-elliptic) orbit $\ell$ of radius $r$; so are its waves. (a) The waves meet in each loop with the charge, are absorbed a portion by it and reemitted, repeatedly, and thereby retained to it; the vacuum, having no lower energy levels for the charge to decay except in a pair annihilation, is essentially a non-dissipative medium. (b) The two waves, being Doppler-differentiated for the moving source, meet each other over the loops and superpose into a beat, or de Broglie phase wave $\Psi$. $\Psi = C e^{i(k_d \ell - \omega T)}$ is a maximum if $2\pi n = n\lambda_{dn}$, $n$ integer, $\lambda_d = 2\pi \frac{c}{k_d} = \left(\frac{\varepsilon}{v}\right) \lambda$ the de Broglie wavelength and $\lambda = \frac{2\pi c}{\omega}$, and accordingly yields a stable state. The corresponding overall eigen solutions are exactly equivalent with the QM results. The classical electrodynamic stability conditions (a)-(b) entail the stability of the atomic system.


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