

## De Broglie Wavelength Defined by the Rest Energy $E_0$ and Its Velocity

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**Abstract :** In this paper, we take a different approach to de Broglie wavelength, as we relate it to relativistic physics. The quantum energy of the photon radiated by a body with de Broglie wavelength, as it moves with velocity  $v$ , can be defined within relativistic physics by rest energy  $E_0$ . In this way, we can show the connection between the quantum of radiation energy of the body and the rest of energy  $E_0$  and thus combine what has been incompatible so far, namely relativistic and quantum physics. So, here we discuss the unification of relativistic and quantum physics by introducing the factor  $k$  that is analog to the Lorentz factor in Einstein's theory of relativity.

**Keywords :** de Broglie wavelength, relativistic physics, rest energy, quantum physics

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