

Doppler shift in de Broglie waves

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Abstract:

In 1923 French scientist Louis de Broglie predicted the wave nature of particles. He extended the concept of wave -particle duality of radiation to matter & proposed the existence of matter waves. His equation was $\lambda = h/mv$. In 1927 , the existence of matter waves was verified experimentally by Davisson & Germer where electrons were used to produce diffraction pattern that was identical to a light wave. An interference pattern has also been obtained when electrons were sent one by one through a double slit apparatus. In the present paper an attempt has been made to study Doppler effect in matter waves on the basis of wave structure of matter (WSM).

Keywords: Doppler effect , Matter waves , Wave structure of matter (WSM) .