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Wave and particle interaction dynamics RAGHVENDRA SINGH,

Vishwaniketan Institute of Management, Entrepreneurship and Engineering Technology — The outcome of a particle and wave interaction is decided by the value of the phase velocity Vp of the wave, dependent over the components of wave vector k through the following relation Vp(x,y,z)= angular frequency/k(x,y,z); c ,momentum gain in direction perpendicular to wave vector component occurs. Vp(x,y,z)= angular frequency/k(x,y,z); c , potential energy of the particle increases in direction perpendicular to the wave vector component. The phase velocity and in turn the outcome of the interaction is affected by the Doppler effect relation apparent angular velocity= (angular velocity +- k(x,y,z).u)/sqrt(1-(u/c)sqr)

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