

Answer on Question #49019, Physics, Other

Task:

If 'u' is the instantaneous velocity of particle and 'v' is the velocity of wave then

1) 'u' is perpendicular to 'v'

2) 'u' is parallel to 'v'.

3) |u| is equal to |v|

4) $|u| = (\text{slope of wave front}) |v|$.

Answer:

'u' is not perpendicular to 'v' and is not parallel to 'v' because we consider the general case.

if we consider the instantaneous velocity vector of the particle and velocity vector of wave, so

they are combined by this relation: **4) $|u| = (\text{slope of wave front}) |v|$.**

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