

Which develops power P coriolis force?

Answer

The Coriolis force is given by formula:

$$\vec{F}_C = -2m \vec{\omega} \times \vec{v},$$

where m is the mass of the relevant object, \vec{v} is the velocity of the particle in the rotating system, and $\vec{\omega}$ is the angular velocity vector which has magnitude equal to the rotation rate ω and is directed along the axis of rotation of the rotating reference frame, and the \times symbol represents the cross product operator.

Power which develops Coriolis force:

$$P = \vec{F}_C \cdot \vec{v} = -2m(\vec{\omega} \times \vec{v}) \cdot \vec{v} = 0,$$

Because vector $\vec{\omega} \times \vec{v}$ is perpendicular to vector \vec{v} and scalar product of two vectors that perpendicular to each other is zero.