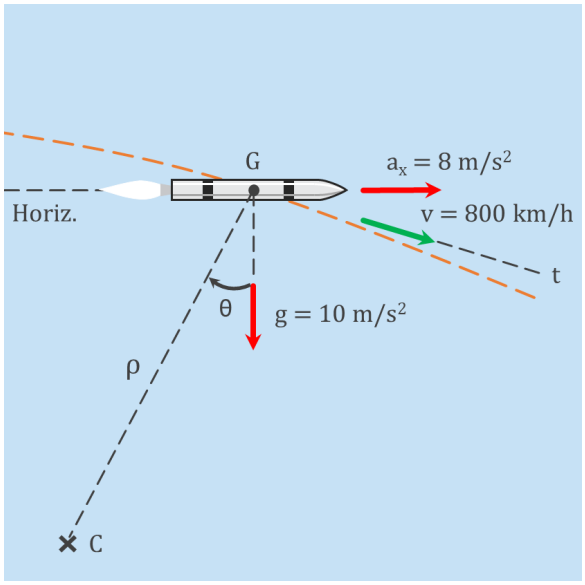
Rocket Accelerates



A rocket maintains at horizontal attitude of its axis during the powered phase of its flight. The acceleration due to horizontal thrust is 8 m/s^2, and the downward acceleration due to gravity is $g = 10$ m/s^2. At the instant represented, the velocity of the mass centre G of the rocket along the (θ) 15° direction of its trajectory is 800 km/h. Determine the angular rate $\dot{\beta}$ of the radial line from G to the centre of curvature C.

Using known expressions:

$$v = \rho \cdot \dot{\beta} \quad \Rightarrow \quad \dot{\beta} = \frac{v}{\rho} \tag{1}$$