Centripetal acceleration (Ch. 1.3.1)

\[ \delta \vec{V} = \vec{V}_1 - \vec{V}_0 \]

Acceleration vector

\[ \frac{D\vec{V}}{Dt} = \lim_{\delta t \to 0} \frac{\delta \vec{V}}{\delta t} \]

Magnitude

Direction

Speed of the parcel

\[ |\vec{V}| = \omega r \]

Angular velocity

\[ \frac{D\theta}{Dt} = \omega \]

In case of the Earth

\[ \Omega: \text{the angular speed of rotation of Earth} \]

\[ \vec{R}: \text{the position vector from the axis of rotation to the object} \]