

What is the difference between centripetal acceleration and angular acceleration?

**Answer**

1. Centripetal acceleration is measured in  $\frac{m}{s^2}$ , while angular acceleration is measured in  $\frac{rad}{s^2}$ .
2. In a circular motion, the centripetal acceleration takes the direction towards the center, which varies over the circulation, but the angular acceleration takes the direction of the corkscrew law, which is a fixed direction.
3. Angular acceleration is an angular quantity, while the centripetal acceleration is a linear quantity.
4. For an object circulating with a fixed angular velocity the angular acceleration is zero, while the centripetal acceleration  $a_{centr}$  has a value of  $r(\text{radius}) * \omega(\text{angular velocity})^2$ :  $a_{centr} = r * \omega^2$ .