

What is the different 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 $r(radius) * \omega(angular\ velocity)^2$: $a_{centr} = r * \omega^2$.