Research & Reviews: Journal of Pure and Applied Physics ISSN: 2320-2459

Reactive Centrifugal Force and its Applications

Sultan Adesina*

Department of Applied Sciences, Cantho University, Cantho, Vietnam

Commentary

Received: 19-May-2023, Manuscript No. JPAP-23-99607; **Editor assigned**: 22-May-2023, Pre QC No. JPAP-23-99607(PQ); **Reviewed**: 05-Jun-2023, QC No. JPAP-23-99607; **Revised**: 12-Jun-2023, Manuscript No. JPAP-23-99607(R) **Published**: 19-Jun-2023, DOI:10.4172/2320-2459.11.2.004.

***For Correspondence:** Sulthan Adesina, Department of Applied Sciences, Catho University, Catho, Vietnam

E-mail: sultan.a@co.vn

Citation: Adesina S. Reactive Centrifugal Force and its Applications. Res Rev J Pure Appl Phys. 2023;11:004.

ABOUT THE STUDY

In the absence of a net force acting on the object, an item goes in a straight path, according to Newton's first law of motion. When such a force applies on it, a curved path may result, this force is sometimes referred to as a centripetal force since it is directed towards the path's centre of curvature. The object will then exert an equal and opposite force on some other object, such as a constraint that forces the path to be curved, in accordance with Newton's third law of motion, and this reaction force, the subject of this article, is sometimes referred to as a reactive centrifugal force because it is directed in the opposite direction as the centripetal force. The reactive force, unlike the inertial force or fictitious force known as centrifugal force, which always exists in addition to the reactive force in the rotating frame of reference, is a true Newtonian force that can be detected in any reference frame. Only when circular motion occurs and the axis of rotation is the origin of the rotating frame of reference will the two forces have the same magnitude. The subject of this essay is the reactive force.

Applications

Although the reactive centrifugal is rarely employed in physics studies, the notion is used in various mechanical engineering concepts. An examination of the stresses within a fast spinning turbine blade is an example of this type of engineering topic. The blade may be thought of as a stack of layers that extends from the axis to the blade's edge. Each layer produces an outward centrifugal force on the next radially inner layer and an inward centripetal force on the next radially outward layer. Simultaneously, the inner layer produces an elastic centripetal force on the middle layer, while the outer layer exerts an elastic centrifugal force, resulting in internal tension. Mechanical engineers are more interested in the stresses in the blade and their sources in this condition.

The centrifugal clutch is another example of a spinning device in which a reactive centrifugal force may be determined and utilised to understand system behaviour. Small engine powered equipment such as chainsaws, go-karts, and miniature helicopters employ centrifugal clutches. It lets the engine to start and idle without driving the gadget, but engages the drive automatically and smoothly as the engine speed increases. The rotating clutch shoes are restrained by a spring. The spring delivers centripetal force to the shoes at low speeds, causing them to travel to a broader radius as the speed increases and the spring extends under strain. When the shoes can't go much further out to raise the spring tension owing to the outer drum, the drum supplies some of the centripetal force that maintains the shoes moving in a circular pattern at greater speeds. The reactive centrifugal forces are the tension force applied to the spring and the outward force exerted to the drum by the spinning shoes. The friction created by the mutual force between the drum and the shoes is required to engage the output drive shaft, which is attached to the drum. As a result, the centrifugal clutch depicts both the fictional and reactive centrifugal forces.