

FRAME OF REFERENCE

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FRAME OF REFERENCE

- For the description of all physical processes involve in motion of a particle or body ,we need correct observation of their position, velocity and forces acting on them,as also the place from where the observation is made and what the observer is doing.
- The Fram in which the observer sits and makes his observations is known as his frame of reference.

TYPES OF FRAME OF REFERENCE

1. Inertial frame of reference
2. Non-inertial frame of reference

INERTIAL FRAME

- Newton's First Law of Motion is also known as the law of Inertia.
- A reference frame e.g., a co-ordinate system in which Newton's First Law of motion holds good, is known as an inertial frame of reference.

Example: The best approximation to an inertial frame is the frame of reference in the intergalactic space.

NON-INTERTIAL FRAME

- The basic laws of physics are not changed in from in Inertial frame of reference.
- But when a frame of reference is accelerated relative to an inertial frame the from of basic laws such as Newton's second law of motion becomes completely different.
- Such frame of reference having an accelerated motion relative to an inertial frame are called non-inertial frame of reference.
- Since a uniformly rotating frame has a centripetal acceleration it is also known as a non-inertial frame.

EXAMPLE

A non-inertial frame is either a frame having uniform Linear acceleration or a frame which is uniformly rotating.

Earth a non-inertial frame: Earth is not an inertial frame. it is a non-inertial frame.

The Earth is a rotating sphere as it is rotating about its own axis. it has a centripetal acceleration due to rotation.

Thankyou

