

1. A heliocentric frame of reference is one where the origin is at the center of the sun.
2. In a geocentric reference frame the earth rotates about an axis which passes through the origin at the center of the earth.
3. An inertial reference frame is a coordinate system which either at rest or moving at velocity (No change in speed or in direction),

Ex. 1. The surface of the earth where the events are short in time compared to the motion of the earth.

Ex. 2. Geocentric frame with the origin at the center of the earth. Works also when motions of earth are slow compared to the experiments.

Ex. 3. Heliocentric frame with the origin at the center of the sun. Good for events that occur in times short compared to the movement of the sun.

4. Non-inertial reference frames are ones that are being accelerated.

Ex. 1. A frame of reference on a falling object. Gravity is accelerating the object downwards.

Ex. 2. A frame of reference in a car going around a corner at constant speed. The car is pushed into the center of the curve by the tires gripping the road.

Ex. 3. A car speeding up on a straight road. The car must be accelerating since it is speeding up.