

Impact of multipath interference and change of velocity on the reliability and precision of GPS

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Abstract:

With the growing use of the Global Positioning System (GPS) in many fields (air, land, sea and space) as advanced navigation system which provide high accurate and reliability for the position (latitude, longitude and altitude) and velocity with time. Multipath is one of the contributing sources of errors that impact on the precision and reliability of GPS. This paper investigates impact of multipath error on the GPS system by using a specially designed simulator platform to simulate multipath interference of the satellite electromagnetic waves and also to evaluate the accuracy of the system with different velocity by using private car. In our tests, we have used GPS receiver card model (GARMIN GPS 25-LVS) is the sensor board of the Global positioning System designed for a wide spectrum of OEM (Original Equipment Manufacturer) with antenna model GA 25 MCX.