

## Performance Evaluation of GPS/INS Main Integration Approach

**Authors :** Othman Makloul, Ahmed Adwail

**Abstract :** This paper introduces a comparative study between the main GPS/INS coupling schemes, this will include the loosely coupled and tightly coupled configurations, several types of situations and operational conditions, in which the data fusion process is done using Kalman filtering. This will include the importance of sensors calibration as well as the alignment of the strap down inertial navigation system. The limitations of the inertial navigation systems are investigated.

**Keywords :** GPS, INS, Kalman filter, sensor calibration, navigation system

**Conference Title :** ICSRD 2020 : International Conference on Scientific Research and Development

**Conference Location :** Chicago, United States

**Conference Dates :** December 12-13, 2020