

## **Adaptive Multipath Mitigation Acquisition Approach for Global Positioning System Software Receivers**

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**Abstract :** Parallel Code Phase Search Acquisition (PCSA) Algorithm has been considered as a promising method in GPS software receivers for detection and estimation of the accurate correlation peak between the received Global Positioning System (GPS) signal and locally generated replicas. GPS signal acquisition in highly dense multipath environments is the main research challenge. In this work, we proposed a robust variable step-size (RVSS) PCSA algorithm based on fast frequency transform (FFT) filtering technique to mitigate short time delay multipath signals. Simulation results reveal the effectiveness of the proposed algorithm over the conventional PCSA algorithm. The proposed RVSS-PCSA algorithm equalizes the received carrier wiped-off signal with locally generated C/A code.

**Keywords :** adaptive PCSA, detection and estimation, GPS signal acquisition, GPS software receiver

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