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GNSS BASED RELATIVE NAVIGATION OF FORMATION SATELLITE WITH LONG BASELINE

Abstract

This study focused on the relative navigation of LEO formation satellite with long baselines. Satellite formation flying is commonly considered a key technology for advanced space missions. Compared with large individual satellite, the distribution of systems to multiple satellites offers improved flexibility and redundancy, shorter times to mission, and the prospect of being more cost effective. Maintaining specific relative orbital geometries or performing maneuvers as proximity flight or fly around is crucial in formation flying. To this end, a robust communication interlink between the various platforms must be assured, and relative navigation and control must be performed in real-time, with high levels of autonomy and accuracy. This study investigates performance of CDGPS for relative navigation of a formation two satellites where the inter-satellite distance(baseline) is long.