

Reference Trajectory Generator For Stereoscopic Acquisitions

This paper aims to present a reference attitude generator to support stereoscopic acquisitions for a spacecraft with large flexible appendages. The proposed trajectory permits to observe the same interest area on the same pass with different angular inclinations thanks to the mechanical steering of the payload. The shaping command input developed by Singer and Warren is used to reduce the system vibration. The reference generator has been designed to be robust to non-modelled spacecraft dynamics and to ensure rapid stabilization time. The proposed reference generator is then exploited inside a CMG based AOCS and a comparison test with a commonly used reference generator is performed. Results show that this approach permits to minimize the manoeuvre stabilization time and the command energy.