

Testing and validation of a B; algorithm for cubesat satellites

ABSTRACT

For most satellite missions, it is essential to decrease the satellite angular velocity. The B algorithm is a common algorithm to stabilize the spacecraft by using magnetorquers. Controlling the satellite using the magnetorquers is part of the attitude control subsystem detumbling mode. Due to oscillating disturbances in the space environment, the required initial conditions needs analysis. As a consequence, the satellite stays in B detumbling mode for the entire operation. In the detumbling mode, the spacecraft oscillates around its spatial axes. The purpose of this paper is to extend the B algorithm with a disturbances compensation module and to achieve reduction of satellite's angular velocity. The developed algorithm is found to be able to reduce satellite's angular velocity up to 10-11 degrees