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An Implementation of a Dual-Spin Spacecraft Attitude Reorientation Using Properties of Its Chaotic Motion

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Abstract : This article contains a description of main ideas for the attitude reorientation of spacecraft (small dual-spin spacecraft, nanosatellites) using properties of its chaotic attitude motion under the action of internal perturbations. The considering method based on intentional initiations of chaotic modes of attitude motion with big amplitudes of the nutation oscillations, and also on the redistributions of the angular momentum between coaxial bodies of the dual-spin spacecraft (DSSC), which perform in the purpose of system's phase space changing.

Keywords : spacecraft, attitude dynamics, control, chaos
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