Attitude determination and control system of Sathyabamasat

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Abstract: A high-precision attitude determination and control of the sathyabama satellite is an essential task for the success of the whole mission. Satellite Attitude determination and control system is an integral part of any satellite. For satellites in LEO an interaction with the local geomagnetic field is an important means of controlling the attitude or orientation. Attitude estimation is highly nonlinear due to the inherent nonlinearity in rotational kinematics, satellite attitude dynamics, and the nature of information through sensors, such as magnetometers. For attitude control, actuators must be based primarily on space and weight minimization. It uses three magnetic torque coils which are oriented orthogonally to each other. This paper describes the attitude determination and control in a closed loop configuration.
Author Keywords: ADCS; Attitude control; Attitude determination; Sathyabamasat

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