

**ATTITUDE DETERMINATION AND CONTROL  
FOR STABILIZATION AND POINTING  
ACCURACY FOR 3U CLASS NANO-SATELLITE**

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**by**

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## **LIST OF ABBREVIATIONS**

**2D** Two Dimensions

**3D** Three Dimensions

**1U** 1-Unit Cube Satellite

**2U** 2-Units Cube Satellite

**3U** 3-Units Cube Satellite

**AMR** Anisotropic Magneto Resistance

**AMS** Alpha Magnetic Spectrometer

**AC** Attitude Control

**AD** Attitude Determination

**ADS** Attitude Determination System

**ACS** Attitude Control System

**ADCS** Attitude Determination And Control System

**ADC** Analog-To-Digital Converter

**ARE** Algebra Riccati Equation

**ASP** Austrian Space Program

**ATSB** Astronautics Technology Sdn.Bhd.

**BRITE** Bright Target Explorer

**c.g** Center Of Gravity

**ECO** Earth-Center Orbit

**CHARM** Cubesat Hydrometric Atmospheric Radiometer Mission

**CHIME** Cubesat Heliospheric Imaging Experiment

**CSSWE** Colorado Student Space Weather Experiment

**CINEMA** Cubesat for Ions, Neutrals, Electrons and Magnetic fields

**COTS** Commercial Of The Shelf

**CDR** Critical Design Review

**CSSWE** Colorado Student Space weather Experiment

**DSP** Digital Signal Processor

**DCM** Direction Cosine Matrix

**DOD** Depth of Discharge

**ESOQ1** Estimator Of The Optimal Quaternion-1

**ESOQ2** Estimator Of The Optimal Quaternion-2

**ECI** Earth Centered Inertial

**ECEF** Earth Centered Earth Fixed

**EKF** Extended Kalman Filter

**ESOQ** Estimator of Optimal Quaternion

**ExEMFP** Experimental Earth Magnetic Field Probe

**ExPSS** Experimental Pyramidal Sun Sensor

**FOAM** Fast Optimal Attitude Matrix

**GUI** Graphical User Interface

**GMR** Giant Magnetic Resistance

**GEOS** Geostationary Operational Environment Satellite

**GPS** Global Positioning System

**IGRF** International Geomagnetic Reference Field

**InnoSAT** Innovation Satellite

**LEO** Low Earth Orbit

**LFT** Linear Fractional Transformation

**LKF** Linearized Kalman Filter

**LLA** Latitude Longitude Altitude

**LMI** Linear Matrix Inequality

**LPV** Linear Parametric Varying

**LQ** Linear Quadratic

**LQR** Linear Quadratic Regulator

**LQG** Linear Quadratic Gaussian

**LTI** Linear Time Invariant

**LTP** Linearize Time-Periodic