



Spacecraft Attitude Dynamics

By Peter C. Hughes

Dover Publications. Paperback. Book Condition: New. Paperback. 592 pages. Dimensions: 9.0in. x 6.0in. x 1.2in. Pointing a satellite in the right direction requires an extremely complex system one that describes the satellites orientation and at the same time predicts and either uses or neutralizes external influences. From its roots in classical mechanics and reliance on stability theory to the evolution of practical stabilization ideas, Spacecraft Attitude Dynamics offers comprehensive coverage of environmental torques encountered in space; energy dissipation and its effects on the attitude stability of spinning bodies; motion equation for four archetypical systems derived and used repeatedly throughout the text; orientation parameters (not limited to Euler angles); illustrations of key concepts with on-orbit flight data; and typical engineering hardware, with examples of the implementation of dynamic ideas. Suitable as a text for advanced undergraduates and graduate students, this unified treatment is also a valuable reference for professional engineers studying the analysis and application of modern spacecraft attitude dynamics. The sole prerequisites are a fundamental knowledge of vector dynamics and matrix algebra. Over 250 diagrams appear throughout the text, along with extensive problem sets at the end of each chapter, 350 references (cited, interpreted, and placed in perspective to reinforce the...



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