

1. Record Nr.	UNINA9910743364903321
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Titolo	Rigid-Flexible Coupling Dynamics and Control of Flexible Spacecraft with Time-Varying Parameters // by Jie Wang, Dong-Xu Li
Pubbl/distr/stampa	Singapore : , : Springer Nature Singapore : , : Imprint : Springer, , 2022
ISBN	981-16-5097-7 981-16-5096-9
Edizione	[1st ed. 2022.]
Descrizione fisica	1 online resource (190 pages)
Collana	Intelligent Technologies and Robotics Series
Disciplina	629.4742
Soggetti	Automatic control Dynamics Nonlinear theories Aerospace engineering Astronautics Control and Systems Theory Applied Dynamical Systems Aerospace Technology and Astronautics
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di contenuto	Introduction -- Modeling of Flexible Spacecraft with Time-varying Parameters -- Dynamic Analysis of Flexible Spacecraft with Time-varying Parameters -- Vibration Control Methods for Systems in Complex Mode Space -- Optimal Variable Amplitudes Input Shaping Control for Slew Maneuver of Flexible Spacecraft -- Coupling Control Method for Flexible Spacecraft -- Attitude Coupling Control Experiments -- Future.
Sommario/riassunto	This book presents the dynamic modeling and attitude control of flexible spacecraft with time-varying parameters. The dynamic characteristics, vibration control methods and attitude stabilization methods for spacecraft are systematically studied in respects of the theoretical modeling, numerical simulation and the ground experiment. Three active control theories in complex mode space are presented for flexible space structures. Optimal slew strategies based on variable

amplitudes input shaping methods and coupling control methods are proposed for stabilization of flexible spacecraft. The research provides an important way to solve the problem of high-precision attitude control of flexible spacecraft with time-varying parameters. This book is appropriate for the researchers who focus on the multi-body dynamics, attitude and vibration control of flexible spacecraft.
