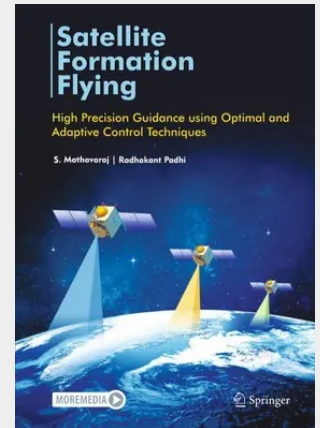


Satellite Formation Flying

High Precision Guidance using Optimal and Adaptive Control Techniques

Small satellite technology is opening up a new era in space exploration offering reduced cost of launch and maintenance, operational flexibility with on-orbit reconfiguration, redundancy etc. The true power of such missions can be harnessed only from close and precise formation flying of satellites. Formation flying missions support diverse application areas such as reconnaissance, remote sensing, solar observatory, deep space observatories, etc. A key component involved in formation flying is the guidance algorithm that should account for system nonlinearities and unknown disturbances. The main focus of this book is to present various nonlinear optimal control and adaptive guidance ideas to ensure precise close formation flying in presence of such difficulties. In addition to in-depth discussion of the relevant topics, MATLAB program files for the results included are also provided for the benefit of the readers. Since this book has concise information about the various guidance techniques, it will be useful reference for researchers and practising engineers in the space field.

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