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based predictive G&C method -- Chapter 8 Robust model predictive control for attitude control tracking.

| Sommario/riassunto | This book focuses on the design and application of advanced trajectory optimization and guidance and control (G&C) techniques for aerospace vehicles. Part I of the book focuses on the introduction of constrained aerospace vehicle trajectory optimization problems, with particular emphasis on the design of high-fidelity trajectory optimization methods, heuristic optimization-based strategies, and fast convexification-based algorithms. In Part II, various optimization theory/artificial intelligence (AI)-based methods are constructed and presented, including dynamic programming-based methods, model predictive control-based methods, and deep neural network-based algorithms. Key aspects of the application of these approaches, such as their main advantages and inherent challenges, are detailed and discussed. Some practical implementation considerations are then summarized, together with a number of future research topics. The comprehensive and systematic treatment of practical issues in aerospace trajectory optimization and guidance and control problems is one of the main features of the book, which is particularly suitable for readers interested in learning practical solutions in aerospace trajectory optimization and guidance and control. The book is useful to researchers, engineers, and graduate students in the fields of G&C systems, engineering optimization, applied optimal control theory, etc. |