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Sommario/riassunto	Optimal Estimation of Dynamic Systems, Second Edition highlights the importance of both physical and numerical modeling in solving dynamics-based estimation problems found in engineering systems. Accessible to engineering students, applied mathematicians, and practicing engineers, the text presents the central concepts and methods of optimal estimation theory and applies the methods to problems with varying degrees of analytical and numerical difficulty. Different approaches are often compared to show their absolute and relative utility. The authors also offer prototype algorithms to stimulate the development and proper use of efficient computer programs. MATLAB's codes for the examples are available on the book's website. New to the Second EditionWith more than 100 p. of new material, this reorganized edition expands upon the best-selling original to include

comprehensive developments and updates. It incorporates new theoretical results, an entirely new chapter on advanced sequential state estimation, and additional examples and exercises. An ideal self-study guide for practicing engineers as well as senior undergraduate and beginning graduate students, the book introduces the fundamentals of estimation and helps newcomers to understand the relationships between the estimation and modeling of dynamical systems. It also illustrates the application of the theory to real-world situations, such as spacecraft attitude determination, GPS navigation, orbit determination, and aircraft tracking--

Preface THIS text is designed to introduce the fundamentals of estimation to engineers, scientists, and applied mathematicians. This text is a rewriting of the first edition written by the current authors in 2004, which was the follow-on to the original estimation book by the second author in 1978. The current text expands upon the past treatment to provide more comprehensive developments and updates, including new theoretical results in the area. It includes over 100 p. of new material, which are mostly devoted to an entirely new chapter on advanced sequential state estimation. Several new examples and exercises have been added as well. The level of the presentation should be accessible to senior undergraduate and first-year graduate students, and should prove especially well-suited as a self study guide for practicing professionals. The primary motivation of this text is to make a significant contribution toward minimizing the painful process most newcomers must go through in digesting and applying the theory. By stressing the interrelationships between estimation and modeling of dynamical systems, it is hoped that this new and unique perspective will be of perennial interest to other students, scholars, and employees in engineering disciplines. This work is the outgrowth of the authors' multiple encounters with the subject while motivated by practical problems with spacecraft attitude determination and control, aircraft navigation and tracking, orbit determination, powered rocket trajectories, photogrammetry applications, and identification of vibratory systems. The text has evolved from lecture notes for short courses and seminars given to professionals at various private laboratories and government agencies, and in conjunction with courses taught at the Universi--