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| Record Nr. | UNINA9910483920503321 |
| Autore | Bacciotti Andrea |
| Titolo | Stability and Control of Linear Systems / / by Andrea Bacciotti |
| Pubbl/distr/stampa | Cham : , : Springer International Publishing : , : Imprint : Springer, , 2019 |
| ISBN | 3-030-02405-9 |
| Edizione | [1st ed. 2019.] |
| Descrizione fisica | 1 online resource (XVII, 189 p. 8 illus.) |
| Collana | Studies in Systems, Decision and Control, , 2198-4182 ; ; 185 |
| Disciplina | 003.74 |
| Soggetti | Automatic control |
| | System theory |
| | Differential equations |
| | Engineering mathematics |
| | Control and Systems Theory |
| | Systems Theory, Control |
| | Ordinary Differential Equations |
| | Engineering Mathematics |
| Lingua di pubblicazione | Inglese |
| Formato | Materiale a stampa |
| Livello bibliografico | Monografia |
| Nota di contenuto | Introduction -- Unforced linear systems -- Stability of unforced linear systems -- Linear systems with forcing term -- Controllability and observability of linear systems -- External stability -- Stabilization -- Frequency domain approach -- Appendix A: Internal stability notions -- Appendix B: Laplace Transform. |
| Sommario/riassunto | This advanced textbook introduces the main concepts and advances in systems and control theory, and highlights the importance of geometric ideas in the context of possible extensions to the more recent developments in nonlinear systems theory. Although inspired by engineering applications, the content is presented within a strong theoretical framework and with a solid mathematical background, and the reference models are always finite dimensional, time-invariant multivariable linear systems. The book focuses on the time domain approach, but also considers the frequency domain approach, discussing the relationship between the two approaches, especially for single-input-single-output systems. It includes topics not usually |

addressed in similar books, such as a comparison between the frequency domain and the time domain approaches, bounded input bounded output stability (including a characterization in terms of canonical decomposition), and static output feedback stabilization for which a simple and original criterion in terms of generalized inverse matrices is proposed. The book is an ideal learning resource for graduate students of control theory and automatic control courses in engineering and mathematics, as well as a reference or self-study guide for engineers and applied mathematicians.