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| Autore                  | Campbell Stephen L                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Titolo                  | Modeling and Simulation with Compose and Activate [[electronic resource] /] / by Stephen L. Campbell, Ramine Nikoukhah                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| Pubbl/distr/stampa      | Cham : , : Springer International Publishing : , : Imprint : Springer, , 2018                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
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| Edizione                | [1st ed. 2018.]                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Descrizione fisica      | 1 online resource (453 pages)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Disciplina              | 003.3                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Soggetti                | Computer software<br>Computer mathematics<br>Mathematical models<br>Computer science—Mathematics<br>Mathematical Software<br>Computational Science and Engineering<br>Mathematical Modeling and Industrial Mathematics<br>Math Applications in Computer Science                                                                                                                                                                                                                                                                                                                |
| Lingua di pubblicazione | Inglese                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Formato                 | Materiale a stampa                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Livello bibliografico   | Monografia                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Nota di contenuto       | Part I Altair COMPOSE and OML -- Chapter 1 General Information -- Chapter 2 Introduction to OML -- Chapter 3 Modeling and Simulation in OML -- Chapter 4 Optimization -- Chapter 5 Examples -- Part II Altair ACTIVATE -- Chapter 6 Introduction -- Chapter 7 Expression Blocks -- Chapter 8 Beyond Single Run Simulations -- Chapter 9 Examples -- Chapter 10 Formalism -- Chapter 11 Hybrid Systems -- Chapter 12 Activate-OML Interactions and Batch Simulation -- Chapter 13 Construction of New Blocks -- Chapter 14 Modelica Support -- Chapter 15 Other Activate Tools. |
| Sommario/riassunto      | This book provides a tutorial in the use of Compose and Activate, software packages that provide system modeling and simulation facilities. Advanced system modeling software provide multiple ways of creating models: models can be programmed in specialized languages, graphically constructed as block-diagrams and state machines, or expressed mathematically in equation-based languages. Compose and                                                                                                                                                                  |

Activate are introduced in this text in two parts. The first part introduces the multi-language environment of Compose and its use for modeling, simulation and optimization. The second describes the graphical system modeling and optimization with Activate, an open-system environment providing signal-based modeling as well as physical system component-based modeling. Throughout both parts are applied examples from mechanical, biological, and electrical systems, as well as control and signal processing systems. This book will be an invaluable addition with many examples both for those just interested in OML and those doing industrial scale modeling, simulation, and design. All examples are worked using the free basic editions of Activate and Compose that are available.

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