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Soggetti	Transportation Automotive engineering Building construction Thermodynamics Heat engineering Heat - Transmission Mass transfer Automotive Engineering Building Physics, HVAC Engineering Thermodynamics, Heat and Mass Transfer
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Nota di contenuto	Preface -- Section I: Model Development -- CFD-based Modeling of Heat Transfer in a Passenger Compartment -- Model Development for Air Conditioning System in Heavy Duty Trucks -- Aggregation-based Thermal Model Reduction -- Section II: Control -- Robust H Switching Control of Polytopic Parameter-Varying Systems via Dynamic Output Feedback -- Output Feedback Control of Automotive Air Conditioning System using H Technique -- Improving Tracking Performance of Automotive Air Conditioning System via µSynthesis -- Mean-Field Control for Improving Energy Efciency -- Pseudospectral Optimal Control for Constrained Nonlinear Systems -- Section III: Optimization -- Multi-objective Supervisory Controller for Hybrid Electric Vehicles -- Energy-Optimal Control of an Automotive Air Conditioning System for Ancillary Load Reduction -- Storage Evaporator -- Cruising Control of

	Hybridized Powertrain for Minimized Fuel Consumption -- Section IV: Fault Diagnosis -- Fault Detection and Isolation with Applications to Vehicle Systems -- Fault Detection and Isolation of Automotive Air Conditioning Systems using First Principle Models -- Evaluating the Performance of Automated Fault Detection and Diagnosis Tools -- Index.
Sommario/riassunto	This book presents research advances in automotive AC systems using an interdisciplinary approach combining both thermal science, and automotive engineering. It covers a variety of topics, such as: control strategies, optimization algorithms, and diagnosis schemes developed for when automotive air condition systems interact with powertrain dynamics. In contrast to the rapid advances in the fields of building HVAC and automotive separately, an interdisciplinary examination of both areas has long been neglected. The content presented in this book not only reveals opportunities when interaction between on-board HVAC and powertrain is considered, but also provides new findings to achieve performance improvement using model-based methodologies.