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Nota di contenuto	A Reference Architecture and Roadmap for Models@run.time Systems -- Mechanisms for Leveraging Models at Runtime in Self-adaptive Software -- Living with Uncertainty in the Age of Runtime Models -- Using Models at Runtime to Address Assurance for Self-Adaptive Systems -- Model-Driven, Moving-Target Defense for Enterprise Network Security -- ModelLAND: Where Do Models Come from? -- From Model-Driven Software Development Processes to Problem Diagnoses at Runtime -- Research Challenges for Business Process Models at Runtime -- Fine-Grained Semi-automated Runtime Evolution -- Evolution as «Reflections on the Design» -- Safety Assurance of Open Adaptive Systems.
Sommario/riassunto	Traditionally, research on model-driven engineering (MDE) has mainly focused on the use of models at the design, implementation, and

verification stages of development. This work has produced relatively mature techniques and tools that are currently being used in industry and academia. However, software models also have the potential to be used at runtime, to monitor and verify particular aspects of runtime behavior, and to implement self-* capabilities (e.g., adaptation technologies used in self-healing, self-managing, self-optimizing systems). A key benefit of using models at runtime is that they can provide a richer semantic base for runtime decision-making related to runtime system concerns associated with autonomic and adaptive systems. This book is one of the outcomes of the Dagstuhl Seminar 11481 on models@run.time held in November/December 2011, discussing foundations, techniques, mechanisms, state of the art, research challenges, and applications for the use of runtime models. The book comprises four research roadmaps, written by the original participants of the Dagstuhl Seminar over the course of two years following the seminar, and seven research papers from experts in the area. The roadmap papers provide insights to key features of the use of runtime models and identify the following research challenges: the need for a reference architecture, uncertainty tackled by runtime models, mechanisms for leveraging runtime models for self-adaptive software, and the use of models at runtime to address assurance for self-adaptive systems.