1. Record Nr. UNINA9910822735603321 Autore Mayada Omer **Titolo** The resilience of networked infrastructure systems / / Mayada Omer, Stevens Institute of Technology, USA Pubbl/distr/stampa New Jersey:,: World Scientific,, [2013] 2013 **ISBN** 981-4452-82-3 1 online resource (xvi, 219 pages): illustrations (some color) Descrizione fisica Collana Systems Research Series; Volume 3 Altri autori (Persone) YunAmanda Disciplina 003.72 Soggetti Reliability (Engineering) Computer networks - Reliability Lingua di pubblicazione Inglese **Formato** Materiale a stampa Livello bibliografico Monografia Note generali Description based upon print version of record. Nota di bibliografia Includes bibliographical references and index. Nota di contenuto Contents; Dedication; Acknowledgments; Disclaimer; Abstract; Chapter 1 - Introduction: 1.1 Need for Resilience in Infrastructure Systems: 1.2 Problem Statement; 1.3 Research Question; 1.4 Research Hypothesis and Its Implications; 1.5 Hypothesis Validation; 1.6 Research Approach; 1.7 Research Contribution; 1.8 Research Assumptions; 1.9 Dissertation Structure: Chapter 2 - Literature Review: 2.1 Resilience Definitions: 2.2 Resilience in Different Disciplines; 2.3 Resilience and Disruptions (Shocks): 2.3.1 Categories of potential disruptions to systems: 2.3.2 Disruption profile 2.4 Methodologies for Characterizing Resilience 2.5 Resilience Measurement Approaches: 2.5.1 Infrastructure resilience metrics; 2.5.2 Service infrastructures resilience metrics; 2.6 Elements of Resilience; 2.6.1 Resilience and vulnerability; 2.6.2 Resilience and adaptive capacity; 2.7 Resilience in Organizations; 2.8 Resilience and Risk Management: 2.9 Summary: Chapter 3 - Relationship Between Reliability, Robustness, Flexibility, Agility and Resilience; 3.1 Reliability; 3.1.1 Definition; 3.1.2 Reliability metrics; 3.1.3 Reliability and resilience; 3.2 Robustness; 3.2.1 Definition 3.2.2 Robustness metrics 3.2.3 Robustness and reliability; 3.2.4 Robustness and resilience; 3.3 Flexibility; 3.3.1 Definition; 3.3.2

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Sommario/riassunto

This volume elaborates on both the qualitative and quantitative aspects of resilience. Reviewing the literature exploring the concept of resilience in engineering, it discusses resilience in terms of the various definitions used, the methodologies proposed to characterize resilience, and the metrics put forward to quantify the resilience of specific service infrastructure systems. The review also identifies the key factors that contribute to organizational resilience. The concept of resilience is compared to other system properties such as reliability, robustness, flexibility and agility, by ta