1.	Record Nr.	UNINA9910462867103321
	Autore	Vaidogas Egidijus Rytas
	Titolo	Prediction of accidental actions likely to occur on building structures : an approach based on stochastic simulation / / Egidijus R. Vaidogas ; Vilnius Gediminas Technical University
	Pubbl/distr/stampa	Vilnius : , : VGTU leidykla TECHNIKA, , 2007
	Descrizione fisica	1 online resource (249 p.)
	Soggetti	Structural engineering - Computer simulation Structural engineering - Data processing Stochastic analysis Simulation methods Electronic books.
	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; Preface; Part I. The problem of accidental actions; 1. Current practice of description and prediction; 1.1 Industrial accidents & accidental actions; 1.2 Accidental actions: definition and classification; 1.3 Current practice of deterministic modelling accidental actions; 1.4 Knowledge available for selecting action models; 1.5 Principal probabilistic model of accidental actions; 1.6 Classical statistical approach to modelling accidental actions 1.7 Conclusion: the need of risk analysis for predicting accidental actions 2. A brief overview of the situation of data related to accidental actions 2.1 The need for diverse information; 2.2 Accident data; 2.3 Data on human reliability; 2.4 Concluding remarks; Part II. Prediction by means of stochastic accident simulation; 3. Classical bayesien approach to predicting accidental actions; 3.1 Introduction; 3.2 Form of action model; 3.3 Selection of action model; 3.4 Case study; 3.5 Expert judgment in Bayesian predicting accidental actions; 3.6 How to apply classical Bayesian action models to damage assessment? 3.7 Conclusion: pros and cons of the classical Bayesian approach4. Predictive, epistemic approach to forecasting accidental actions; 4.1

Introduction; 4.2 Principles of application to accidental actions; 4.3 Form of action model: 4.4 Specifying the action model by a stochastic accident simulation; 4.5 Case study; 4.6 Quantifying epistemic uncertainties related to problem input; 4.7 Application to damage assessment; 4.8 Conclusion: pros and cons of the predictive epistemic approach; Part III. Utilising direct data on accidental actions; 5. Resampling direct data within frequentist's approach 5.1 Introduction 5.2 Risk of damage due to accidental action; 5.3 Damage assessment: frequentist's approach or Bayesian updating?; 5.4 Use of bootstrap resampling to estimating damage probabilities; 5.5 Case study; 5.6 Concluding remarks; 6. Bayesian resampling of direct data on an accidental action; 6.1 Introduction; 6.2 Basic ideas; 6.3 Knowledge available for estimating damage probability; 6.4 Application of Bayesian bootstrap; 6.5 Case study; 6.6 Concluding remarks; Postscript; Appendix A. Abbreviations; Appendix B. Novation; Appendix C. Compiuter programs Appendix D. Selected bibliographyReferences; Index