

1. Record Nr.	UNINA9910495176803321
Titolo	Complexity in Tsunamis, Volcanoes, and their Hazards // edited by Robert I. Tilling
Pubbl/distr/stampa	New York, NY : , : Springer US : , : Imprint : Springer, , 2022
ISBN	1-0716-1705-2
Edizione	[1st ed. 2022.]
Descrizione fisica	1 online resource (354 illus., 225 illus. in color. eReference.)
Collana	Encyclopedia of Complexity and Systems Science Series, , 2629-2343
Disciplina	551.4637
Soggetti	Natural disasters Mathematical physics Probabilities Geotechnical engineering System theory Natural Hazards Theoretical, Mathematical and Computational Physics Probability Theory Geotechnical Engineering and Applied Earth Sciences Complex Systems
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di contenuto	Part I: Tsunami Processes, Hazards, & Forecasting -- Tsunami Earthquakes -- Tsunamis: Stochastic Models of Occurrence and Generation Mechanisms -- Wedge Mechanics: Relation with Subduction Zone Earthquakes and Tsunamis -- Tsunamis, Inverse Problem -- Tsunamis: Bayesian Probabilistic Analysis -- Tsunami Inundation, Modeling -- Tsunami Sedimentology -- Tsunami from the Storegga Landslide -- Tsunamis Effects in Man-Made Environment -- Tsunami Hazard and Risk Assessment on the Global Scale -- Tsunamigenic Major and Great Earthquakes (2004–2013): Source Processes Inverted from Seismic, Geodetic, and Sea-Level Data -- Earthquake Source Parameters, Rapid Estimates for Tsunami Forecasts and Warnings -- Tsunami Forecasting and Warning -- Fukushima Catastrophe. The Challenge of Complexity. Collective Reflexivity, Adaptive Knowledge,

Political Innovation -- Part II: Volcanic Processes, Eruptions, & Hazards -- Volcano Seismology: An Introduction -- Source Quantification of Volcanic-Seismic Signals -- Volcanoes, Non-linear Processes -- Volcano Deformation: Insights into Magmatic Systems -- Volcanoes in Iceland and Crustal Deformation Processes -- Volcanic Eruptions, Explosive: Experimental Insights -- Volcanic Eruptions: Cyclicity During Lava Dome Growth -- Volcanic Eruptions: Stochastic Models of Occurrence Patterns -- Volcanic Hazards and Early Warning -- Volcanic Hazards Warnings: Effective Communications.

---

Sommario/riassunto

This volume of the Encyclopedia of Complexity and Systems Science, Second Edition is an authoritative single source for understanding and applying the basic tenets of complexity and systems theory, as well as the tools and measures for analyzing complex systems, to the prediction, monitoring, and evaluation of earthquakes, tsunamis, and volcanoes. Early warning, damage, and the immediate response of human populations to these extreme environmental events are also covered from the point of view of complexity and nonlinear systems. In authoritative, state-of-the art articles, world experts in each field apply such complexity tools and concepts as fractals, cellular automata, solitons game theory, network theory, and statistical physics to an understanding of these complex geophysical phenomena.

---