1. **Record Nr.** UNICAMPANIAVAN00298018

   Autore Cercignani, Carlo

   Titolo Scaling Limits and Models in Physical Processes / Carlo Cercignani, David H. Sattinger

   Pubbl/distr/stampa Basel, : Springer, : Birkhäuser, 1998

   Descrizione fisica vi, 190 p. ; 24 cm

   Altri autori (Persone) Sattinger, David H.

   Soggetti 35-XX - Partial differential equations [MSC 2020]

   37J35 - Completely integrable finite-dimensional Hamiltonian systems, integration methods, integrability tests [MSC 2020]
   37K10 - Completely integrable infinite-dimensional Hamiltonian and Lagrangian systems, integration methods, integrability tests, integrable hierarchies (KdV, KP, Toda, etc.) [MSC 2020]
   76D33 - Waves for incompressible viscous fluids [MSC 2020]

   76Pxx - Rarefied gas flows, Boltzmann equation in fluid mechanics [MSC 2020]
   82-XX - Statistical mechanics, structure of matter [MSC 2020]

   82C40 - Kinetic theory of gases in time-dependent statistical mechanics [MSC 2020]

   Lingua di pubblicazione Inglese

   Formato Materiale a stampa

   Livello bibliografico Monografia

2.	Record Nr.	UNINA9910299964803321
	Autore	Abramovich Sergei
	Titolo	Computational Experiment Approach to Advanced Secondary Mathematics Curriculum / / by Sergei Abramovich
	Pubbl/distr/stampa	Dordrecht : , : Springer Netherlands : , : Imprint : Springer, , 2014
	ISBN	94-017-8622-4
	Edizione	[1st ed. 2014.]
	Descrizione fisica	1 online resource (333 p.)
	Collana	Mathematics Education in the Digital Era, , 2211-8144 ; ; 3
	Disciplina	510.78
	Soggetti	Mathematics - Study and teaching Mathematics - Data processing Education - Data processing Computer software Learning, Psychology of Mathematics Education Computational Mathematics and Numerical Analysis Computers and Education Mathematical Software Instructional Psychology
	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	Preface -- 1. Theoretical foundations of computational experiment approach to secondary mathematics -- 2. One-variable equations and inequalities: the unity of computational experiment and formal demonstration -- 3. Computationally supported study of quadratic functions depending on parameters -- 4. Computational experiment approach to equations with parameters -- 5. Inequalities with parameters as generators of new meanings -- 6. Computational experiments in trigonometry -- 7. Advancing stem education through temp: Geometric probabilities -- 8. Exploring topics in elementary number theory through a computational experiment -- References. .
	Sommario/riassunto	This book promotes the experimental mathematics approach in the context of secondary mathematics curriculum by exploring mathematical models depending on parameters that were typically

considered advanced in the pre-digital education era. This approach, by drawing on the power of computers to perform numerical computations and graphical constructions, stimulates formal learning of mathematics through making sense of a computational experiment. It allows one (in the spirit of Freudenthal) to bridge serious mathematical content and contemporary teaching practice. In other words, the notion of teaching experiment can be extended to include a true mathematical experiment. When used appropriately, the approach creates conditions for collateral learning (in the spirit of Dewey) to occur including the development of skills important for engineering applications of mathematics. In the context of a mathematics teacher education program, this book addresses a call for the preparation of teachers capable of utilizing modern technology tools for the modeling-based teaching of mathematics with a focus on methods conducive to the improvement of the whole STEM education at the secondary level. By the same token, using the book's pedagogy and its mathematical content in a pre-college classroom can assist teachers in introducing students to the ideas that develop the foundation of engineering profession.