

1. Record Nr.	UNINA9910338255803321
Autore	Fillion Nicolas
Titolo	Algorithms and Complexity in Mathematics, Epistemology, and Science : Proceedings of 2015 and 2016 ACMES Conferences // edited by Nicolas Fillion, Robert M. Corless, Ilias S. Kotsireas
Pubbl/distr/stampa	New York, NY : , : Springer New York : , : Imprint : Springer, , 2019
ISBN	1-4939-9051-9
Edizione	[1st ed. 2019.]
Descrizione fisica	1 online resource (300 pages)
Collana	Fields Institute Communications, , 2194-1564 ; ; 82
Disciplina	511.8
Soggetti	Mathematics - Data processing Knowledge, Theory of Computer science - Mathematics Discrete mathematics Computational Mathematics and Numerical Analysis Epistemology Mathematical Applications in Computer Science Discrete Mathematics
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di contenuto	Introduction -- Ethics and the Continuum Hypothesis (J.R. Brown) -- How to Generate All Possible Rational Wilf-Zeilberger Pairs (S. Chen) -- Backward Error Analysis for Perturbation Methods (R.M. Corless, N. Fillion) -- Proof Verification Technology and Elementary Physics (E. Davis) -- An Applied/Computational Mathematician's View of Uncertainty Quantification for Complex Systems (M. Gunzburger) -- Dynamical Symmetries and Model Validation (B.C. Jantzen) -- Modeling the Biases in Last Digit Distributions of Consecutive Primes (D. Lichtblau) -- Computational Aspects of Hamburger's Theorem (Y. Matiyasevich) -- Effective Validity: A Generalized Logic for Stable Approximate Inference (R.H.C. Moir) -- Counterfactuals in the Real World (J. Woodward, M. Wilson).
Sommario/riassunto	ACMES (Algorithms and Complexity in Mathematics, Epistemology, and Science) is a multidisciplinary conference series that focuses on epistemological and mathematical issues relating to computation in

modern science. This volume includes a selection of papers presented at the 2015 and 2016 conferences held at Western University that provide an interdisciplinary outlook on modern applied mathematics that draws from theory and practice, and situates it in proper context. These papers come from leading mathematicians, computational scientists, and philosophers of science, and cover a broad collection of mathematical and philosophical topics, including numerical analysis and its underlying philosophy, computer algebra, reliability and uncertainty quantification, computation and complexity theory, combinatorics, error analysis, perturbation theory, experimental mathematics, scientific epistemology, and foundations of mathematics. By bringing together contributions from researchers who approach the mathematical sciences from different perspectives, the volume will further readers' understanding of the multifaceted role of mathematics in modern science, informed by the state of the art in mathematics, scientific computing, and current modeling techniques. .
