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Titolo	Trick or Truth? : The Mysterious Connection Between Physics and Mathematics / / edited by Anthony Aguirre, Brendan Foster, Zeeya Merali
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Descrizione fisica	1 online resource (253 p.)
Collana	The Frontiers Collection, , 1612-3018
Disciplina	530
Soggetti	Physics Philosophy and science Mathematical physics Logic, Symbolic and mathematical History and Philosophical Foundations of Physics Philosophy of Science Mathematical Applications in the Physical Sciences Mathematical Logic and Foundations
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 at the end of each chapters.
Nota di contenuto	Introduction -- Children of the cosmos (S. Wenmackers) -- Mathematics is Physics (M. S. Leifer) -- My god, it's full of clones: Living in a mathematical universe (M. Séguin) -- Let's consider two spherical chickens (T. Bolognesi) -- The raven and the writing desk (I. Durham) -- The deeper roles of mathematics in physical laws (K. H. Knuth) -- How mathematics meets the world (T. Maudlin) -- Mathematics: intuition's consistency check (K. Wharton) -- How not to factor a miracle (D. K. Wise) -- The language of nature (D. Garfinkle) -- Demystifying the applicability of mathematics (N. Fillion) -- Why mathematics works so well (N. S. Yanofsky) -- Genesis of a pythagorean universe (A. Burov) -- Beyond math (S. Magnusdottir) -- The descent of math (S. I. Walker) -- The ultimate tactics of self-referential systems (C. C. Dantas) -- Cognitive science and the connection between physics and mathematics (A. Gupta Mujumdar) --

A metaphorical chart of our mathematical ontology (P. Gibbs).-And the math will set you free (C. Stoica) -- Appendix: List of winners.

Sommario/riassunto

The prize-winning essays in this book address the fascinating but sometimes uncomfortable relationship between physics and mathematics. Is mathematics merely another natural science? Or is it the result of human creativity? Does physics simply wear mathematics like a costume, or is math the lifeblood of physical reality? The nineteen wide-ranging, highly imaginative and often entertaining essays are enhanced versions of the prize-winning entries to the FQXi essay competition “Trick or Truth”, which attracted over 200 submissions. The Foundational Questions Institute, FQXi, catalyzes, supports, and disseminates research on questions at the foundations of physics and cosmology, particularly new frontiers and innovative ideas integral to a deep understanding of reality, but unlikely to be supported by conventional funding sources.