

1. Record Nr.	UNINA9910741171603321
Titolo	What is Fundamental? / / edited by Anthony Aguirre, Brendan Foster, Zeeya Merali
Pubbl/distr/stampa	Cham : , : Springer International Publishing : , : Imprint : Springer, , 2019
ISBN	3-030-11301-9
Edizione	[1st ed. 2019.]
Descrizione fisica	1 online resource (189 pages)
Collana	The Frontiers Collection, , 1612-3018
Disciplina	530.01
Soggetti	Physics Philosophy and science Logic, Symbolic and mathematical Particles (Nuclear physics) Quantum field theory History and Philosophical Foundations of Physics Philosophy of Science Mathematical Logic and Foundations Elementary Particles, Quantum Field Theory
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di contenuto	Introduction -- Fundamental? (Emily Adlam) -- Against Fundamentalism (Matthew Leifer) -- The Politics of Fundamentality (Alyssa Ney) -- Of Lego and Layers (and Fundamentalism) (Dean Rickles) -- Fundamentality Here, Fundamentality There, Fundamentality Everywhere (Marc Séguin) -- Mind before matter: reversing the arrow of fundamentality (Markus Müller) -- Things, Laws, and the Human Mind (Tejinder Singh) -- The Case for Strong Emergence (Sabine Hossenfelder) -- Mad-Dog Everettianism: Quantum Mechanics at Its Most Minimal (Sean Carroll, Ashmeet Singh) -- Bell's Theory of Beables and the Concept of 'Universe' (Ian Durham) -- Fundamentality, Explanation, and the Unity of Science (Gregory Derry) -- When do we stop digging? Conditions on a fundamental theory of physics (Karen Crowther) -- Fundamental is Non-Random (Ken Wharton) -- Socrates, Atoms, and Beig: A Dialogue (Mozibur Ullah).Fundamentality' as a

Sommario/riassunto

Are there truly fundamental entities in nature? Or are the things that we regard as fundamental in our theories – for example space, time or the masses of elementary particles – merely awaiting a derivation from a new, yet to be discovered theory based on elements that are more fundamental? This was the central question posed in the 2018 FQXi essay competition, which drew more than 200 entries from professional physicists, philosophers, and other scholars. This volume presents enhanced versions of the fifteen award-winning essays, giving a spectrum of views and insights on this fascinating topic. From a prescription for “when to stop digging” to the case for strong emergence, the reader will find here a plethora of stimulating and challenging ideas - presented in a largely non-technical manner - on which to sharpen their understanding of the language of physics and even the nature of reality.