

1. Record Nr.	UNINA9910150542503321
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Titolo	Chiral Four-Dimensional Heterotic String Vacua from Covariant Lattices // by Florian Beye
Pubbl/distr/stampa	Singapore : , : Springer Singapore : , : Imprint : Springer, , 2017
ISBN	9789811008047
Edizione	[1st ed. 2017.]
Descrizione fisica	1 online resource (XII, 95 p. 3 illus.)
Collana	Springer Theses, Recognizing Outstanding Ph.D. Research, , 2190-5053
Disciplina	530.15
Soggetti	Quantum field theory String models Particles (Nuclear physics) Mathematical physics Quantum Field Theories, String Theory Elementary Particles, Quantum Field Theory Mathematical Applications in the Physical Sciences
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di bibliografia	Includes bibliographical references at the end of each chapters.
Nota di contenuto	Introduction -- Classification of Chiral Models -- Model Building -- Summary.
Sommario/riassunto	This book is placed at the interface between string theory and elementary particle physics and shows novel results in the search for a heterotic string vacuum that reproduces those matter particles and interactions observed in our universe. The author provides a systematic classification of potentially realistic heterotic covariant lattice vacua, which possess a lower number of moduli fields when compared to conventional compactification methods, by means of number theoretical methods. These methods, while well known to the mathematics community, have not yet found many applications to physics. They are introduced to the degree necessary to understand the computations carried out throughout this work. Furthermore, explicit covariant lattice models with particularly interesting properties are analyzed in detail. Finally, new light is shed on the relation between covariant lattice models and asymmetric orbifold compactifications, the

result being a concrete correspondence between certain types of asymmetric orbifolds and those classified covariant lattices.

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