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Autore	Buckholtz Thomas J
Titolo	Models for Physics of the Very Small and Very Large // by Thomas J. Buckholtz
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ISBN	94-6239-166-1
Edizione	[1st ed. 2016.]
Descrizione fisica	1 online resource (393 p.)
Collana	Atlantis Studies in Mathematics for Engineering and Science, , 1875-7642 ; ; 14
Disciplina	539.72015118
Soggetti	Mathematical physics Elementary particles (Physics) Quantum field theory Cosmology Mathematical Physics Elementary Particles, Quantum Field Theory Theoretical, Mathematical and Computational Physics
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	Overview -- From data to the MM1 meta-model and MM1MS1 models -- From the MM1 meta-model to particles and properties -- From particles to cosmology and astrophysics -- From MM1MS1 models to traditional models -- From MM1MS1 models to traditional theories -- From the MM1 meta-model to perspective -- Appendices -- Compendia.
Sommario/riassunto	This monograph tackles three challenges. First, show a mathematics-based meta-model that matches known elementary particles. Second, apply models, based on the meta-model, to match other known physics data. Third, predict future physics data. The math features solutions to isotropic pairs of isotropic quantum harmonic oscillators. This monograph matches some solutions to known elementary particles. Matched properties include spin, types of interactions in which the particles partake, and (for elementary bosons) approximate masses. Other solutions point to possible elementary particles. This monograph applies the models and the extended particle list. Results narrow gaps

between physics data and theory. Results pertain to elementary particles, astrophysics, and cosmology. For example, this monograph predicts properties for beyond-the-Standard-Model elementary particles, proposes descriptions of dark matter and dark energy, provides new relationships between known physics constants (including masses of some elementary particles), includes theory that dovetails with the ratio of dark matter to ordinary matter, includes math that dovetails with the number of elementary-fermion generations, suggests forces that govern the rate of expansion of the universe, and suggests additions to and details for the cosmology timeline.
