Record Nr. UNINA9910818510403321 Autore Zenczykowski Piotr <1950-> **Titolo** Elementary particles and emergent phase space // Piotr Zenczykowski, Institue of Nuclear Physics, Poland New Jersey:,: World Scientific,, [2014] Pubbl/distr/stampa 2014 **ISBN** 981-4525-69-3 Descrizione fisica 1 online resource (xi, 219 pages): illustrations Collana Gale eBooks Disciplina 530.13/3 Soggetti Phase space (Statistical physics) Particles (Nuclear physics) Lingua di pubblicazione Inglese **Formato** Materiale a stampa Livello bibliografico Monografia Note generali Description based upon print version of record. Includes bibliographical references and index. Nota di bibliografia Introduction -- Reality and its description -- Classical and quantum Nota di contenuto aspects of reality -- Time for a change -- The standard model and the subparticle paradigm -- The problem of mass -- Constituent guarks and spacetime points -- Elementary particles and macroscopic space -- Phase space and its symmetries -- Quantizing phase space --Elementary particles from a phase-space perspective -- Generalizing the concept of mass -- Overview. Sommario/riassunto The Standard Model of elementary particles, although very successful, contains various elements that are put in by hand. Understanding their origin requires going beyond the model and searching for ""new physics"". The present book elaborates on one particular proposal concerning such physics. While the original conception is 50 years old, it has not lost its appeal over time. Its basic idea is that space - an arena of events treated in the Standard Model as a classical background - is a concept which emerges from a strictly discrete quantum layer in

the limit of large quantum numbers. This bo