Record Nr. UNINA9910133752803321 Titolo Clusters in nuclei . Vol. 2 / / Christian Beck, editor Berlin; ; New York, : Springer, c2012 Pubbl/distr/stampa **ISBN** 3-642-24707-5 Edizione [1st ed. 2012.] 1 online resource (XV, 353 p. 167 illus.) Descrizione fisica Lecture notes in physics, , 0075-8450 ; ; v.848 Collana Altri autori (Persone) BeckChristian Disciplina 539.7 Soggetti Cluster theory (Nuclear physics) Nuclear structure Lingua di pubblicazione Inglese **Formato** Materiale a stampa Livello bibliografico Monografia Bibliographic Level Mode of Issuance: Monograph Note generali Nota di bibliografia Includes bibliographical references. Nota di contenuto Preface -- Microscopic Cluster Models -- Neutron Halo and Breakup Reactions -- Breakup Reaction Models for Two-and Three-Cluster Projectiles -- Clustering Effects Within the Dinuclear Model -- Nuclear Alpha-Particle Condensates -- Clusters in Nuclei: Experimental Perspectives. Sommario/riassunto Following the pioneering discovery of alpha clustering and of molecular resonances, the field of nuclear clustering is today one of those domains of heavy-ion nuclear physics that faces the greatest challenges, yet also contains the greatest opportunities. After many summer schools and workshops, in particular over the last decade, the community of nuclear molecular physicists has decided to collaborate in producing a comprehensive collection of lectures and tutorial reviews covering the field. This second volume follows the successful Lect. Notes Phys. 818 (Vol.1), and comprises six extensive lectures covering the following topics: • Microscopic cluster models Neutron halo and break-up reactions · Break-up reaction models for two- and three-cluster projectiles · Clustering effects within the di-nuclear model · Nuclear alpha-particle condensates Clusters in nuclei: experimental perspectives By promoting new ideas and developments while retaining a pedagogical style of presentation throughout, these lectures will serve as both a reference and an advanced teaching manual for future courses and schools in the fields of nuclear physics and nuclear astrophysics.