

1. Record Nr.	UNINA9910337883603321
Autore	Agarwala Adhip
Titolo	Excursions in Ill-Condensed Quantum Matter : From Amorphous Topological Insulators to Fractional Spins // by Adhip Agarwala
Pubbl/distr/stampa	Cham : , : Springer International Publishing : , : Imprint : Springer, , 2019
ISBN	3-030-21511-3
Edizione	[1st ed. 2019.]
Descrizione fisica	1 online resource (XXIII, 163 p. 59 illus., 49 illus. in color.)
Collana	Springer Theses, Recognizing Outstanding Ph.D. Research, , 2190-5053
Disciplina	530.41
Soggetti	Solid state physics Mathematical physics Magnetism Magnetic materials Solid State Physics Theoretical, Mathematical and Computational Physics Magnetism, Magnetic Materials
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di contenuto	Introduction -- Tenfold Way -- Topological Insulators in Amorphous Systems -- Seeking Topological Phases in Fractals -- Seeking Topological Phases in Fractals -- Killing the Hofstadter Buttery -- Fractional Spins and Kondo Eect -- Structure of Many-Body Hamiltonians in Dierent Symmetry Classes -- Epilogue.
Sommario/riassunto	Impurities, disorder or amorphous systems – ill-condensed matter – are mostly considered inconveniences in the study of materials, which is otherwise heavily based on idealized perfect crystals. The Kondo effect and the scaling theory of localization are among the fundamental and early discoveries which revealed the novelty hidden in impure or disordered systems. Recent advances in condensed matter physics have emphasized the role of topology, spin-orbit coupling, and certain discrete symmetries such as time reversal in many physical phenomena. These have irreversibly transformed the essential ideas and purview of condensed matter physics, both in theoretical and

experimental directions. However, many of these recent developments and their implications are limited to, or by, ideas that pertain to clean systems. This thesis deals with various aspects of these new developments, but in the case of unclean systems. The author introduces new ideas such as amorphous topological insulators, fractalized metals and fractionalized spins.

---