

1. Record Nr.	UNINA9910918598903321
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Titolo	Anisotropic Isoperimetric Problems and Related Topics // edited by Valentina Franceschi, Alessandra Pluda, Giorgio Saracco
Pubbl/distr/stampa	Singapore : , : Springer Nature Singapore : , : Imprint : Springer, , 2024
ISBN	9789819769841 9819769841
Edizione	[1st ed. 2024.]
Descrizione fisica	1 online resource (216 pages)
Collana	Springer INdAM Series, , 2281-5198 ; ; 62
Altri autori (Persone)	PludaAlessandra SaraccoGiorgio
Disciplina	519
Soggetti	Mathematics Mathematical analysis Discrete mathematics Applications of Mathematics Analysis Applications of Discrete Mathematics
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di contenuto	-- Geometric invariants of non-smooth framed curves (by Bevilacqua, Lussardi, and Marzocchi) -- Minimal periodic foams with equal cells (by Cesaroni and Novaga) -- On a Cheeger--Kohler-Jobin inequality (by Lucardesi, Mazzoleni, and Ruffini) -- Isoperimetry on manifolds with Ricci bounded below: overview of recent results and methods (by Pozzetta) -- Stochastic homogenization of functionals defined on finite partitions (by Bach and Ruf) -- On sets with finite distributional fractional perimeter (by Comi and Stefani) -- On a Free-Endpoint Isoperimetric Problem in \mathbb{R}^2 (by Alama, Bronsard, and Vriend) -- Isoperimetric sets in nonnegative scalar curvature and their role through various concepts of mass (by Benatti and Fogagnolo) -- A crystallization result in two dimensions for a soft disc affine potential (by Del Nin and De Luca).
Sommario/riassunto	This book contains contributions from speakers at the "Anisotropic Isoperimetric Problems & Related Topics" conference in Rome, held from Sep 5 to 9, 2022. The classic isoperimetric problem has

fascinated mathematicians of all eras, starting from the ancient Greeks, due to its simple statement: what are the sets of a given volume with minimal perimeter? The problem is mathematically well understood, and it plays a crucial role in explaining physical phenomena such as soap bubble shapes. Variations of the problem, including weighted counterparts with density dependencies, representing inhomogeneity and anisotropy of the medium, broaden its applicability, even in non-Euclidean environments, and they allow for descriptions, e.g., of crystal shapes. At large, the perimeter's physical interpretation is that of an attractive force; hence, it also appears in describing systems of particles where a balance between attractive and repulsive forces appears. A prominent example is that of Gamow's liquid drop model for atomic nuclei, where protons are subject to the strong nuclear attractive force (represented by the perimeter) and the electromagnetic repulsive force (represented by a nonlocal term). Such a model has been shown to be sound, as it explains the basic characteristics of the nuclei, and it successfully predicts nuclear fission for nuclei with a large atomic number. Similar energy functionals model various physical and biological systems, showcasing the competition between short-range interfacial and long-range nonlocal terms, leading to pattern formation. The authors mention, e.g., the Ohta–Kawasaki model for microphase separation of diblock copolymers and the Yukawa potential for colloidal systems. Despite diverse systems, the emergence of microphases follows similar patterns, although rigorously proving this phenomenon remains a challenge. The book collects several contributions within these topics, shedding light on the current state of the art.
