1.	Record Nr.	UNINA9910437869103321
	Autore	Volchkov V. V (Valeri V.)
	Titolo	Offbeat integral geometry on symmetric spaces / / Valery V. Volchkov, Vitaly V. Volchkov
	Pubbl/distr/stampa	Basel ; ; New York, : Springer, 2013
	ISBN	3-0348-0572-1
	Edizione	[1st ed. 2013.]
	Descrizione fisica	1 online resource (594 p.)
	Altri autori (Persone)	VolchkovVitaly V
	Disciplina	516.362
	Soggetti	Symmetric spaces Integral geometry
	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 indexes.
	Nota di contenuto	Preface -- Part 1. Analysis on Symmetric Spaces. 1 Preliminaries -- 2 The Euclidean case -- 3 Symmetric spaces of the non-compact type.-4 Analogies for compact two-point homogeneous Spaces -- 5 The phase space associated to the Heisenberg group.-Part 2. Offbeat Integral Geometry -- 1 Functions with zero ball means on Euclidean space -- 2 Two-radii theorems in symmetric spaces -- 3 The problem of finding a function from its ball means -- 4 Sets with the Pompeiu property -- 5 Functions with zero integrals over polytopes.-6 Ellipsoidal means -- 7 The Pompeiu property on a sphere -- 8 The Pompeiu transform on symmetric spaces and groups.-9 Pompeiu transforms on manifolds -- Bibliography -- Index -- Basic notation.
	Sommario/riassunto	The book demonstrates the development of integral geometry on domains of homogeneous spaces since 1990. It covers a wide range of topics, including analysis on multidimensional Euclidean domains and Riemannian symmetric spaces of arbitrary ranks as well as recent work on phase space and the Heisenberg group. The book includes many significant recent results, some of them hitherto unpublished, among which can be pointed out uniqueness theorems for various classes of functions, far-reaching generalizations of the two-radii problem, the modern versions of the Pompeiu problem, and explicit reconstruction formulae in problems of integral geometry. These results are intriguing and useful in various fields of contemporary mathematics. The proofs given are "minimal" in the sense that they involve only those concepts

and facts which are indispensable for the essence of the subject. Each chapter provides a historical perspective on the results presented and includes many interesting open problems. Readers will find this book relevant to harmonic analysis on homogeneous spaces, invariant spaces theory, integral transforms on symmetric spaces and the Heisenberg group, integral equations, special functions, and transmutation operators theory.