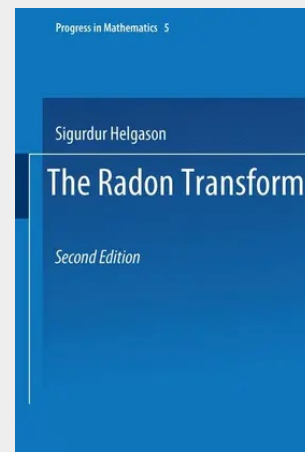


The Radon Transform

The first edition of this book has been out of print for some time and I have decided to follow the publisher's kind suggestion to prepare a new edition. Many examples with explicit inversion formulas and range theorems have been added, and the group-theoretic viewpoint emphasized. For example, the integral geometric viewpoint of the Poisson integral for the disk leads to interesting analogies with the X-ray transform in Euclidean 3-space. To preserve the introductory flavor of the book the short and self-contained Chapter 'Von Schwartz' distributions has been added. Here §5 provides proofs of the needed results about the Riesz potentials while §§3-4 develop the tools from Fourier analysis following closely the account in Hormander's books (1963) and [1983]. There is some overlap with my books (1984) and [1994b] which however rely heavily on Lie group theory. The present book is much more elementary. I am indebted to Sine Jensen for a critical reading of parts of the manuscript and to Hilgert and Schlichtkrull for concrete contributions mentioned at specific places in the text. Finally I thank Jan Wetzel and Bonnie Friedman for their patient and skillful preparation of the manuscript.

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