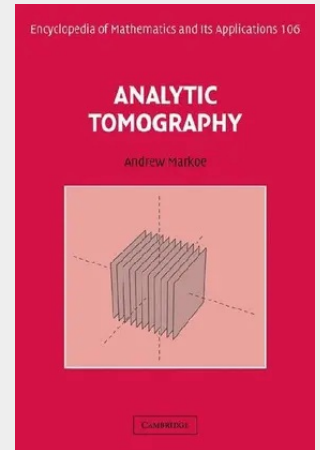


Analytic Tomography

This book is a comprehensive study of the Radon transform, which operates on a function by integrating it over hyperplanes. The book begins with an elementary and graphical introduction to the Radon transform, tomography and CT scanners, followed by a rigorous development of the basic properties of the Radon transform. Next the author introduces Grassmann manifolds in the study of the k-plane transform (a version of the Radon transform) which integrates over k-dimensional planes rather than hyperplanes. The remaining chapters are concerned with more advanced topics, such as the attenuated Radon transform and generalized Radon transforms defined by duality of homogeneous spaces and double fibrations. Questions of invertibility and the range of the Radon transform are dealt with and inversion formulas are developed with particular attention to functions on L_2 spaces and some discussion of the case of L_p spaces.

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