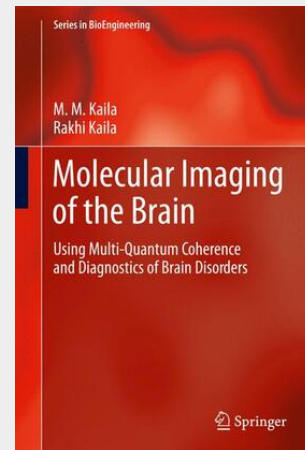


Molecular Imaging of the Brain

Using Multi-Quantum Coherence and Diagnostics of Brain Disorders

This book examines multi-quantum magnetic resonance imaging methods and the diagnostics of brain disorders. It consists of two Parts. The part I is initially devoted towards the basic concepts of the conventional single quantum MRI techniques. It is supplemented by the basic knowledge required to understand multi-quantum MRI. Practical illustrations are included both on recent developments in conventional MRI and the MQ-MRI. This is to illustrate the connection between theoretical concepts and their scope in the clinical applications. The Part II initially sets out the basic details about quadrupole charge distribution present in certain nuclei and their importance about the functions they perform in our brain. Some simplified final mathematical expressions are included to illustrate facts about the basic concepts of the quantum level interactions between magnetic dipole and the electric quadrupole behavior of useful nuclei present in the brain. Selected practical illustrations, from research and clinical practices are included to illustrate the newly emerging ideas and techniques. The reader should note that the two parts of the book are written with no interdependence. One can read them quite independently.

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