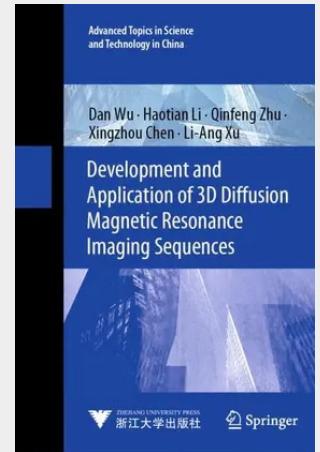


Development and Application of 3D Diffusion Magnetic Resonance Imaging Sequences

This book focuses on diffusion magnetic resonance imaging(MRI). It first introduces the principles and methods of diffusion MRI. Subsequently, a series of sequence modules are constructed for a 3D diffusion MRI sequence. These modules include global saturation, diffusion preparation, fat saturation, gradient and spin echo readout, and navigator readout modules. Based on simulation and experimental results, the book presents the application of these imaging sequences for measuring diffusion time dependence in the adult brain and highlights their advantages in fiber tractography imaging compared to conventional diffusion sequences. From a novel perspective, this book extends 3D sequence imaging techniques to the field of diffusion MRI, integrating theory, models, and experimental findings. It serves as a valuable reference for scientists, engineers, and graduate students involved in research on diffusion MRI sequences.

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