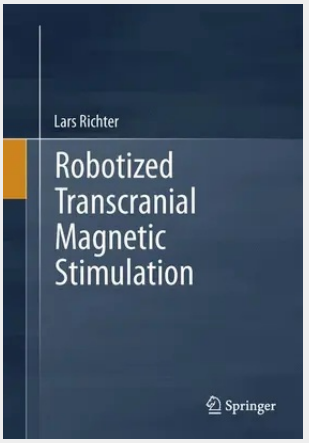
Richter

Robotized Transcranial Magnetic Stimulation



Robotized Transcranial Magnetic Stimulation describes the methods needed to develop a robotic system that is clinically applicable for the application of transcranial magnetic stimulation (TMS). Chapter 1 introduces the basic principles of TMS and discusses current developments towards robotized TMS. Part I (Chapters 2 and 3) systematically analyzes and clinically evaluates robotized TMS. More specifically, it presents the impact of head motion on the induced electric field. In Part II (Chapters 3 to 8), a new method for a robust robot/camera calibration, a sophisticated force-torque control with hand-assisted positioning, a novel FTA-sensor for system safety, and techniques for direct head tracking, are described and evaluated. Part III discusses these developments in the context of safety and clinical applicability of robotized TMS and presents future prospects of robotized TMS. Robotized Transcranial Magnetic Stimulation is intended for researchers as a guide for developing effective robotized TMS solutions. Professionals and practitioners may also find the book valuable.

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