Electrical stimulation of myelinated axons

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Condition: New. Publisher/Verlag: VDM Verlag Dr. Müller | An interactive tutorial supported by computer simulation | Electrical stimulation of the nervous system plays a major role in medicine and rehabilitation. Muscles can be stimulated to avoid disuse, impaired function can be improved by targeted stimulation of certain nerves, and brain and spinal cord function can be researched. To appropriately apply these techniques, it is essential to understand the underlying mechanisms involved in the artificial activation of the central and peripheral nervous system by electrical stimulation. This book elaborates on the development and comparison of nerve fiber models which describe the influence of the applied electrical field on the neurons. A computer simulation tool using Matlab is presented that enables experiments with two commonly used axon models including calculation of excitation thresholds and investigation of action potential propagation. This book addresses students as well as scientists, who either want to examine the fundamentals of modeling neural excitation pattern or are interested in designing and developing own experiments with the provided application (included download). | Format: Paperback | Language/Sprache: english | 139 gr | 220x150x5 mm | 92 pp.

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