



Epilepsy: The Intersection of Neurosciences, Biology, Mathematics, Engineering, and Physics

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Epilepsy, one of the most prevalent neurological disorders, affects approximately 1% (greater than 60 million) of the world's population. In an estimated 20 million of these patients, seizures are not controlled even by multiple anti-seizure drugs, and are extremely difficult to predict. **Epilepsy: The Intersection of Neurosciences, Biology, Mathematics, Engineering, and Physics** seamlessly brings together the neurosciences, mathematics, computational sciences, engineering, physics, and clinical epileptology to present to readers a highly didactic, integrated, clear and practically useful knowledge base and research directions.

Laying out the foundations of signal analysis, data conditioning, linear and non-linear analysis, introduction to dynamical systems and fundamental anatomical and neurophysiological concepts, this book:

- Introduces non-physicians to language and concepts necessary to establish a meaningful dialog with epileptologists
- Introduces physicians to dynamical theory and signal processing without which interdisciplinary collaborations would not be productive
- Mines knowledge from fields devoted to the investigation of aperiodic paroxysmal relaxation phenomena, such as earthquakes, which bear dynamical similarities with epilepsy, so as to lay the proper scientific foundations for epileptology and foster much needed therapeutic advances efficiently
- Reviews spatiotemporal behavior of seizures, mechanisms of epileptogenesis and ictogenesis as well as of seizure control and ancillary technology
- Calls attention to nocturnal frontal lobe epilepsy as a potentially fruitful paradigm for advancing seizure prediction.

Of all neurological disorders, epilepsy demands of investigators the broadest and deepest knowledge of dynamical, control, and system theories, knowledge that cannot be amassed without possessing a certain level of sophistication in relevant areas of neurosciences, physics, mathematics, and engineering. Narrowing the inescapable cultural chasm that commonly fragments multidisciplinary efforts, this book captures and enriches the burgeoning interdisciplinary synergism in the nascent field of dynamical epileptology.

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Jennifer Case:

In this era globalization it is important to someone to find information. The information will make you to definitely understand the condition of the world. The health of the world makes the information simpler to share. You can find a lot of sources to get information example: internet, newspaper, book, and soon. You can see that now, a lot of publisher this print many kinds of book. The book that recommended for your requirements is Epilepsy: The Intersection of Neurosciences, Biology, Mathematics, Engineering, and Physics this e-book consist a lot of the information on the condition of this world now. This specific book was represented how can the world has grown up. The words styles that writer value to explain it is easy to understand. The particular writer made some research when he makes this book. That's why this book appropriate all of you.

Edward Vogler:

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