



Under the Hood Seminar

July 17, 2024

10:30 AM

Lecture Hall (00.187) at BioZentrum I, Hanns-Dieter-Hüsch-Weg 15, 55128
Mainz or <https://bbb.rlp.net/rooms/orl-nvl-sqb-9gg/join>

Dr. Erika E. Rodriguez-Torres

Autonomous University of Hidalgo, Mexico

Fractal analysis of electrophysiological recordings

Measuring spontaneous neural activity,
spinal cord lesions, and cognitive impairment
without dementia

The application of analytical procedures, both mathematical and computational, to physiological problems has significantly enhanced our understanding of the fundamental processes in living organisms. This talk will present advanced mathematical tools, including classification and fractal analysis, along with computational software, to strengthen and optimize the study of the structure-function relationship in physiological systems. The studies discussed will cover a range of topics: identifying patterns of spontaneous activity recorded in the cat spinal cord, determining the fractal structure of spinal cord lesions, exploring cognitive impairment without dementia, and performing a mathematical analysis of the electrocardiogram. These approaches offer a deeper and more nuanced interpretation of electrophysiological data, paving the way for innovative research and applications in neuroscience and medicine.

The IQCB seminar series "Under the Hood" provides a forum for scientists at all career levels to present the technical side of their research. Talks are aimed at an audience interested in the methods, algorithms, and programs used to address a specific research question. "Under the Hood" talks stimulate lively discussions among researchers facing similar computational challenges in their research, lead to transfer of technical knowledge and ideas and promote collaboration.

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