Mon, April 21st, 2022, 12:00 p.m., DIBRIS – Room 705, via Dodecaneso 35, Genova.

Analysis and Learning

The Radon transform, neural networks and splines

Abstract.

Electroencephalography and Magnetoencephalography (EEG/MEG) are two powerful techniques recording signals from the brain at a one-millisecond resolution. EEG/MEG data are very rich in information and are currently used in many contexts, ranging from basic neuroscience to clinical applications. In this talk I will consider two intertwined problems related to the analysis of EEG/MEG data: (1) the source localization problem, amounting to estimating the neural currents underlying recorded time series; (2) the connectivity estimation problem, amounting to characterizing the interactions between spatially distinct areas.

Speaker

Michaël Unser

Biomedical Imaging Group, EPFL, Lausanne, Switzerland

Michael Unser is Full Professor with EPFL's School of Engineering and the academic director of EPFL's Center for Imaging, Lausanne, Switzerland. His primary areas of investigation are biomedical imaging and applied functional analysis. He is internationally recognized for his research contributions to sampling theory, wavelets, the use of splines for image processing, stochastic processes, and computational bioimaging. He has published over 400 journal papers on those topics. He is the author with P. Tafti of the book "An introduction to sparse stochastic processes", Cambridge University Press 2014. Prof. Unser is a fellow of the IEEE (1999), an EURASIP fellow (2009), and a member of the Swiss Academy of Engineering Sciences. He is the recipient of several international prizes including five IEEE-SPS Best Paper Awards, two Technical Achievement Awards from the IEEE (2008 SPS and EMBS 2010), the Technical Achievement Award from EURASIP (2018), and a recent Career Achievement Award (IEEE EMBS 2020). He was awarded three ERC AdG grants: FUNSP (2011-2016), GlobalBioIm (2016-2021), and FunLearn (2021-2026).

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