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Neural Dynamics and Information Processing

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Message from the Guest Editors

Information theory has emerged as a framework for investigating how neural populations operate. However, it is difficult to scale information-theoretic methods to large neural populations or long recordings. At the same time, progress in recording techniques yields ever-increasing numbers of simultaneously recorded neurons, providing rich datasets for the analysis of underlying neural population dynamics. New modeling and methodological approaches are developed to investigate neural dynamics and exploit the advantages of information-theoretic measures in this context, dealing with the challenges of computational and sample complexities.

This Special Issue is concerned with the latest contributions to modeling neural dynamics, in conjunction with approaches from information theory, which are applied to tuning and interpreting dynamical models. We also invite research at the intersection between machine learning and neuroscience aiming to scale dynamics or information theory approaches to larger scales.



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Special Issue



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Message from the Editor-in-Chief

The concept of entropy is traditionally a quantity in physics that has to do with temperature. However, it is now clear that entropy is deeply related to information theory and the process of inference. As such, entropic techniques have found broad application in the sciences.

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