



OIST

OKINAWA INSTITUTE OF SCIENCE AND TECHNOLOGY
沖縄科学技術大学院大学

THEORETICAL SCIENCES VISITING PROGRAM

TSVP TALK

MODELING NETWORKS REVEALS
HOW NEURAL CONNECTIVITY
TRANSFORMS SPACE INTO TIME

2022
FRI. **AUG. 5TH**

10:00 - 11:00

HYBRID L4E48, ZOOM



For zoom and other details scan QR code or visit groups.oist.jp/tsvp

The connectivity structure of many biological systems, including neural circuits, is highly non-uniform. Recent technologies allow detailed mapping of these irregularities. But our understanding of the contribution of each such irregular connectivity component to the overall circuitry dynamics, is still lacking. By developing complex system analytical tools, which perform astute reduction of the network, I detect the impact of each connectivity component. I will demonstrate the use of these tools on examples, including clustering, a ubiquitous non-uniform structure in our brains. I will show how clusters are able to transform spatial properties into timing mechanisms and vice versa.

HEBREW UNIVERSITY

MERAV STERN

Merav Stern is a theoretical neuroscientist. Her research unveils the relationships between neural activity and connectivity, in both biological and artificial neural networks by improving the tools for studying non-linear dynamical system. She completed her PhD with honors at the Interdisciplinary Center for Neural Computation at Hebrew University while collaborating with Columbia University's Center for Theoretical Neuroscience. She won the Zuckerman leadership scholarship and worked at the Swartz Theory Center at the University of Washington. She is currently a postdoc at the Hebrew University, collaborating with the University of Oregon.



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CONTACT

FAO (Office of Dean of Faculty Affairs)



tsvp@oist.jp