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

VISITING PROGRAM

# TSVP TALK

# Information Propagation in Multiscale Systems

## From Biochemical Signaling to Transduction Mechanisms

2026 Tue. **Feb. 24**

**11:00–12:00**

**HYBRID** L5D23, ZOOM

For zoom and other details scan the QR code or visit oist.jp/visiting-program


The presence of interconnected fluctuating processes occurring across multiple temporal scales is a fundamental characteristic of neural networks, ecological communities, biochemical architectures, and many other complex systems. Such processes can interact both directly and indirectly, with couplings across timescales often exhibiting intricate internal properties. This complexity makes understanding the relationships between the components of these multiscale systems a formidable challenge.
In this talk, I will begin by exploring how the distinct timescales associated with each process influence their effective couplings.



Max Planck Institute for the Physics of Complex Systems

## Daniel M. Busiello


Daniel M. Busiello earned his PhD in Physics from the University of Padua in 2018. He subsequently joined the Statistical Biophysics Lab at EPFL as a postdoctoral researcher. In 2022, he was appointed to an independent research position at the Max Planck Institute for the Physics of Complex Systems in Germany, where he established his research line at the interface of information theory, stochastic thermodynamics, and chemical reaction networks. Since early 2025, he has been a Group Leader at the University of Padua. Daniel was awarded the Early Career Scientist Prize in Statistical Physics in 2025 and received the IgNobel Prize in Physics for his work on the phase behavior of Cacio e Pepe sauce.

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