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

VISITING PROGRAM

TSVP TALK

(A)Symmetry and Complexity in Neural Systems

2026
THU. **Jun. 04**

15:00–16:00

HYBRID L5D23, ZOOM



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We are bilaterians—our bodies have a left-right mirror symmetry, which is roughly inherited by our brains. This is fitting for some tasks (e.g. motor control), but overkill for others. How does brain symmetry relate to cognitive complexity? A long-held hypothesis tracked back to Broca states that more complex organisms should have more asymmetric brains. We present a theoretical framework to tackle (and prove) this conjecture. Aided by simple mathematical models, we then explore roles of neural (a)symmetry in the brain, and some consequences for long-range plasticity.



Institute for Evolutionary Biology (IBE)
Spanish National Research Council (UPF-CSIC)

Luis F Seoane

Luis F Seoane heads the BIT-Lab at the Institute for Evolutionary Biology, of the Spanish National Research Council. His background is in Physics & Computational Neuroscience, with a PhD in Complex Systems. He has works in neuroscience, maths of Darwinian evolution, complex networks, linguistics, or econophysics. He often studies how complexity affect systems (e.g. how it makes them grow, thrive, or fail) and vice versa (e.g. how a system's size or success might alter its complexity).

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