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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

How Can Mathematics Help To Understand Evolution by Natural Selection?

2025
THU. **Oct. 23**

15:00–16:00

HYBRID

C700, ZOOM



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Evolution is sometimes thought of as a simple optimization process, in which the “best” possible individuals win the competition. In reality it depends on the present environment what kind of features actually are good, and the environment is in turn affected by all individuals in the evolving population. This environmental feedback loop can be investigated by tools of mathematical modelling. Using such tools, we can understand otherwise counterintuitive phenomena, such as evolutionary suicide: natural selection can even result in the extinction of the evolving population.



University of Turku

Kalle Parvinen

Kalle Parvinen studied applied mathematics at the University of Turku, Finland, where he completed his master's degree in 1997 and PhD degree in 2001. He obtained his habilitation (docent, adjunct professor) in biomathematics in 2006. In 2012, he completed pedagogical studies for university teachers. He is a permanent university researcher in applied mathematics at the University of Turku. He has visited OIST several times as a visiting researcher. Kalle Parvinen develops mathematical models to investigate Darwinian evolution by natural selection. His specific fields of interest are metapopulations, especially structured metapopulation models, evolution of dispersal and cooperation, and the general theory of adaptive dynamics, including evolutionary suicide and function-valued traits.

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