

BDR SEMINAR (Kobe & online hybrid)

Stephan Grill

Max-Planck Institute of Molecular Cell Biology and Genetics

Thursday, February 12, 2026

10:30-11:30

1F Auditorium, DB Building C, Kobe / Broadcast online via Zoom

Zoom meeting URL will be announced on the event day by e-mail.

※Non-BDR members: Please register from the following link.

<https://krs2.riken.jp/m/bdrseminarregistration> (Registration deadline Feb 9)

Actomyosin Active Matter

Summary

One of the most remarkable examples of self-organized structure formation is the development of a complex organism from a single fertilized egg. With the identification of molecules that participate in this process of morphogenesis, attention has now turned to capturing the physical principles that govern the emergence of biological form. What are the physical laws that govern the dynamics and the formation of structure in living matter? Much of the force generation that drives morphogenesis stems from the actomyosin cortical layer of cells just underneath the cell surface, which endows the surface with the ability to generate active stresses and active torques that can drive reshaping. We combine theory and experiment and investigate how the actomyosin cell surface emerges in a fertilized embryo, how it generates active stresses that drive deformations and movement, and how it supports chiral rotations, all in the nematode worm during early morphogenesis.



RIKEN Center for Biosystems Dynamics Research (BDR)

Host: Tatsuo Shibata
Laboratory for Physical Biology, BDR
Contact: tatsuo.shibata@riken.jp