

プログラム共同セミナー

第431回生命科学セミナー

日時: 2024/6/21, 14:35-16:05

場所: 総合科学部 講義棟 J303

表題: Self-organization of the cytoplasm in early embryogenesis

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要旨: Early embryos are the epitome of self-organization. Following the cell cycle oscillator, their internal structure is continuously reorganized into precise patterns at remarkable speeds. Physical processes play key role in this reorganization, but their understanding remains largely elusive. In this talk, I will show how the autocatalytic growth of microtubule asters drives an instability in cytoplasmic organization. I will explain that embryos circumvent this instability through two distinct mechanisms: either by matching the cell cycle duration to the time needed for the instability to unfold or by limiting microtubule nucleation. These regulatory mechanisms give rise to two possible strategies to fill the cytoplasm, unveiling a fundamental synergy between physical instabilities and biological clocks [1].

[1] M. Rinaldin et al., bioRxiv 2024.03.12.584684

※このセミナーは、統合生命科学研究科プログラム共同セミナーの対象となります。

【問い合わせ先】

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