



Sächsische
Forscherguppe
"From Local Constraints to
Macroscopic Transport"

Cytoskeletal pattern formation: Self organization of driven filaments

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Living cells rely on the self-organization mechanisms of cytoskeleton to adapt to their requirements. Especially in processes such as cell division, intracellular transport or cellular motility the controlled self-assembly to well defined structures, which still allow a dynamic reorganization on different time scales are of outstanding importance. Thereby, the intricate interplay of cytoskeletal filaments, crosslinking proteins and molecular motors plays a central role. One important and promising strategy to identify the underlying governing principles is to quantify the physical process in model systems mimicking the functional units of living cells. Here I will present in vitro minimal model systems consisting of actin filaments, crosslinking molecules and motor proteins exhibiting collective motion patterns and long range order. I will discuss how the balance of local force exertion and the influence of different crosslinking molecules affect the evolving dynamic structures.

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15:30

Universität Leipzig
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