

CPP 70: Closing talk (joint session BP/ CPP/DY)

Time: Friday 12:30–13:15

Location: H1

Invited Talk

CPP 70.1 Fri 12:30 H1

Pattern formation in active cytoskeletal systems — ●ANDREAS R. BAUSCH — Lehrstuhl für Biophysik, Technische Universität München, 85747 Garching

Living cells rely on the self-organization mechanisms of cytoskeleton to adapt to their requirements. In processes such as cell division, or cellular motility rely on the controlled self-assembly and disassembly of well defined active cytoskeletal structures interacting with lipid membranes. One important and promising strategy to identify the

underlying governing principles is to quantify the underlying physical processes in model systems mimicking functional units of living cell. Here I'll present in vitro minimal model systems consisting of active microtubule and actin filament systems which show pattern formation resulting from active transport processes. I will discuss how small variations in local interactions results in nematic or polar patterns in high density motility essays. With the example of reconstituted active vesicles I will discuss how to relate local force exertion and tension generation to shape transformations, blebbing, invagination or tethering of lipid membranes