

# Einladung zum Würzburger Mathematischen Kolloquium

Julius-Maximilians-Universität Würzburg • Fakultät für Mathematik und Informatik

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Universität Wien

## Why are Lamellipodia flat ?

Mittwoch, den 25. Juni 2014 • 16:15 Uhr

Raum SE 40, Mathematik Ost, Emil-Fischer-Str. 40, Campus Hubland-Nord

### Inhaltsangabe

Lamellipodia are flat cell protrusions functioning as movement organs of crawling cells. A new modeling approach for sections of lamellipodia will be presented, where a stochastic model for the nucleation and polymerization of individual actin filaments is coupled with an obstacle problem describing the deformation of the cell membrane. The main new modeling idea is an interaction between filament dynamics and local membrane geometry. An important player in this context is the protein IRSp53, which combines a function as an anchor between the cell membrane and branching/polymerization agents on the one hand with an influence on (and sensitivity to) the membrane geometry. Without any predetermined geometric restrictions, simulations of the coupled model predict flat lamellipodia.

This is joint work with Christoph Winkler.



[www.mathematik.uni-wuerzburg.de/kolloquium.html](http://www.mathematik.uni-wuerzburg.de/kolloquium.html)

Zu diesem Vortrag laden wir Sie herzlich ein.  
Im Anschluss an die Vorträge Kaffee und Tee im Foyer vor dem SE 40.

Die Dozentinnen und Dozenten der Mathematik

