



## *E i n l a d u n g*

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*zum öffentlichen Vortrag im Rahmen des Treffens  
der Sächsischen Forschergruppe  
"From Local Constraints to Macroscopic Transport"*

**Cécile Sykes**

*(Institut Curie/CNRS/Université Paris 6, Frankreich)*

*am Freitag, 29.10.2010, 12.30 Uhr*

*im Seminarraum 224  
des Physikalischen Institutes,  
Linnéstr. 5, 04103 Leipzig*

***„Shells of Actin That Behave Like a Cell Cortex:  
A Biomimetic Experiment“***

In order to unveil generic mechanisms of cell movements, we designed stripped-down experimental systems that reproduce cellular behaviours in simplified conditions, either using beads or droplets that reconstitute actin-based movements in controlled conditions, or simplified cellular systems like cell fragments that change shape like a cell. More recently, we have reconstituted the actin cortex of cells inside liposomes, and used it as a simplified system to study endocytosis. Such stripped-down systems allow for a controlled study of the physical mechanisms that underlie cell movements and cell shape changes. Moreover, these experimental systems are used to address biological issues within a controlled, simplified environment. We will present our work on reconstituted actin cortices inside liposomes, and a characterization of their mechanical properties measured by tube pulling, and liposome spreading, as done previously in cells. Moreover, we will explain how such an experimental system is of interest to address the mechanism of the Shiga toxin entry inside cells: actin polymerization inside a liposome is sufficient to provide toxin entry.

*Alle Interessenten sind dazu herzlich eingeladen.*

*Prof. Käs, Cichos, Kroy*

*Leipzig, 22.10.2010*