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# GASTVORTRAG

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## „Multiscale Modeling and Visualization of Cells and their Membranes.“

### Abstract:

Multiscale modeling and visualization of cellular environments is an important topic from a scientific as well as educational perspective. It plays an important role in analyzing and understanding metabolic processes, structural molecular complexes or the targeting of drugs.

The CELLmicrocosmos project combines different information layers for multiple purposes: At the molecular level, the MembraneEditor is used by many projects to model heterogeneous membranes as a base for molecular simulations and analyses [SDGS11]. Showing small parallels to cellVIEW [LAPV15], the CellExplorer is a software tool which can be used to visualize and explore cell environments at the mesoscopic level. Combined with the PathwayIntegration, cytological networks can be localized and integrated into these cell environments [KoGS16, SKSH10]. In the recent years we developed a number of new cytological visualization approaches which can be explored on multiple scales: from the local computer, to web browsers, to mobile phones and Head-mounted displays, and to large-scale virtual environments like the CAVE2 [FNTT13, KoGS16, SBHG14, SHKC16, SWXC15]. In this context we are currently working with the CeBiTec Bielefeld on the visualization of a Chlamydomonas reinhardtii cell.

### Biography:

Björn Sommer is a Research Fellow with the Department of Computer & Information Science of the University of Konstanz. He studied Media Informatics & Media Sciences at Bielefeld University, Germany, made his PhD in Bioinformatics, and was working as researcher at the Bio-/Medical Informatics Department. From 2015 to 2016, he was working as Research Fellow in the Immersive Analytics initiative of Monash University, Melbourne. Together with his students he developed the CELLmicrocosmos project.

**Datum: Freitag 10. November 2017, 10:30 Uhr s.t.****Ort:** TU Wien, Favoritenstr. 9, Stiege 1, 5. Stock, Seminarraum 186