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Die Physikalisch-Medizinische Sozietät Erlangen und das Max-Planck-Institut für die Physik des Lichts

lädt Sie zu folgendem Vortrag ein:

„Mechanical Forces as Drivers of Bacterial Motility and Formation of Microcolonies"

Professor Vasily Zaburdaev

FAU Erlangen-Nürnberg, Department of Biology and Max-Planck-Zentrum für Physik und Medizin, Erlangen
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Most bacteria coming into contact with surfaces form complex differentiated communities known as biofilms. Individual bacterial cells use retractile filaments, called pili, to attach and actively move on surfaces. Pili also mediate intracellular interactions and drive the formation of bacterial microcolonies. In this talk, we will discuss how the mechanical forces actively generated by bacteria may lead to the emergence of heterogeneous microcolonies, thus predestining a transition of a collection of completely identical cells towards a differentiated mature biofilm. Mechanically heterogeneous environment created by bacteria might serve as a trigger of the differential gene expression within the colony and the establishment of the bacterial multicellularity.

Vasily Zaburdaev recently started as a Professor of Mathematics in Life Sciences at FAU in Erlangen and has a joint appointment in the newly established Max-Planck-Zentrum für Physik und Medizin in Erlangen. Dr. Zaburdaev received his PhD in theoretical plasma physics in 2004 at the Russian Research Center "Kurchatov Institute" in Moscow. During the following three postdoctoral positions at the MPI in Göttingen, TU-Berlin and at Harvard University the research focus of Dr. Zaburdaev shifted towards soft-matter and theoretical biophysics. In 2013, he joined the MPI for the Physics of Complex Systems in Dresden as a group leader in the Department of Biological Physics, from where he moved to Erlangen in 2018. Zaburdaev's group is interested in a broad spectrum of interdisciplinary biophysical problems ranging from chromatin organization and bacterial colonies to understanding the physical mechanisms of dormancy.

Mittwoch, 12. Dezember 2018, 17.15 Uhr
(45 Minuten Vortrag plus Diskussion,
im Anschluss findet die Jahresmitgliederversammlung der PhysicoMedica statt)

Veranstaltungsort:
Seminarraum (1.OG) des Instituts für Klinische Mikrobiologie, Immunologie und Hygiene, Wasserturmstraße 3/5
(Zugang: rückwärtiger Hörsaaleingang gegenüber der Orangerie)

Für Rückfragen wenden Sie sich bitte an:
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