DK Seminar

May 10, 2017, 14:15 - 15:45
University of Vienna,
Oskar-Morgenstern-Platz 1, HS 2

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Cortex mechanics for adhesion-free cell motion

For some years now, C. Schmeiser and its group have proposed and studied the motility mechanisms of cells, particularly those of lamellipodium type, which assumes some binding between the cell membrane and the substrate. Recent experiments by Anne Reversat and Michael Sixt (IST) have shown that in appropriately structured environments, motility is preserved even for cells which have been genetically engineered to remove their bonding ability. I will discuss two variants of a continuous model describing this phenomenon, derived from a relatively simple Newton's 2nd law at the discrete level. The two main, non standard ingredients are the treatment of the polymerization and cortex internal friction, which when combined, create motion.
Some numerical experiments and embryonic analysis will also be discussed.