

EINLADUNG

zum Vortrag
von

Univ.Prof. Dr. John W. C. Dunlop

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The physics of tissue growth on curved surfaces

am

Dienstag, 16. Jänner 2018, um 17:30 Uhr

Ort: Lise-Meitner-Hörsaal, Fakultät für Physik, Universität Wien,
1090 Wien, Strudlhofgasse 4 / Boltzmannngasse 5, 1. Stock

Barrierefreier Zugang: Boltzmannngasse 5, Lift, 1. Stock rechts über den Gang zum Hintereingang des Hörsaals

Abstract:

Biological tissues can change both shape and size throughout an organism lifecycle via processes of active growth or passive swelling. Both aspects of tissue morphogenesis are known to be influenced by the physical constraints of the surrounding 3D environment, although the fundamental mechanisms that control them still remain unclear. This presentation will illustrate how geometric constraints, and in particular the curvature of a substrate, influences tissue growth. We combined theoretical and experimental approaches with cell-culture experiments performed on surfaces with controlled mean and Gaussian curvatures. In addition to learning about the fundamental biophysics of morphogenesis, it is hoped the ideas stemming from such research can be used to design new materials for regenerative medicine.