

Seminar

From Rigidity Transition in Three-Dimensional Epithelial Monolayers to Bulk Tissue Modelling

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Rigidity transition in tissue mechanics has primarily been studied using two-dimensional (2D) vertex models where planar polygonal tilings describe the apical sides of the cells in tissues. However, one recent work showed that a straightforward extension of this model to three dimensions (3D) fails to exhibit a similar transition. In the first part of this talk, I will demonstrate how a physically realistic generalisation of the Volume- and Area-elasticity model recovers the rigidity transition in 3D epithelial monolayers. In the last part, I will illustrate the Graph Vertex Model (GVM), a recently developed framework designed to simulate and analyse the mechanics of bulk 3D tissues.

Wednesday, Jun 25th 2025 11:30 Hrs (Tea / Coffee 11:15 Hrs) Auditorium, TIFRH