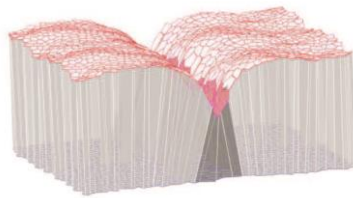


BiophysTO Lunchtime Talks

Guillaume Salbreux

The Francis Crick Institute, UK

Physics of tissue morphogenesis: from
cellular forces to tissue shape



How processes inside the cell result in tissue reorganisation at the scale of the organism is a crucial question to understand embryonic development. Epithelial tissues in particular are dynamically remodelled due to forces generated in cells, cellular rearrangements, and cell division and apoptosis. In this talk, I will discuss a physical description of the mechanics of an epithelium during embryonic morphogenesis. I will first describe how the dynamics of cell and tissue shape changes during the development of the *Drosophila* pupal wing can be understood by analyzing tissue stresses and topological rearrangements in the tissue. I will then discuss a three-dimensional vertex model allowing to simulate tissue mechanics in three dimensions. Using this model, we have analysed the formation of two tissue folds in the *Drosophila* wing imaginal disc, which arise from differential tension generated laterally and basally in the epithelial cells.

Host: Dr. Josh Milstein

(Refreshments and pizza will be provided)

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Thursday, Dec 1, 2016 – 12:00 pm, noon
DV3129 at UTM and via streaming to McLennan
Physical Laboratories, Room MP606