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Microscopic model for cell growth regulation

The mechanism which regulates cell growth and proliferation are still poorly understood. We consider a microscopic model to study the growth of pseudo-stratified epithelia. In this model the tissue is represented as an elastic box and each cell is modelled by hard sphere with non overlapping constraint. This gives rise to an minimisation of an energy with constraint. In addition we implement the rules of cell division, with some assumptions on the mechanisms which regulate the growth of the tissue. Finally, we aim to check our hypothesis with experimental data.