**Overview of computational model of cell proliferation under an electric field**

Lucas Paul

Aspects:

Cell-Cell:

* Repulsion
* Adhesion

Cell-Field

* Field Interaction based on point force model
  + AC Discrete Field
  + AC sine Field

Dynamics:

* Neighbor alignment (radius of interest)
* Noise factor in cell proliferation
* Pressure-based dynamic suppression of growth
  + Color coded pressure
* Cell Growth
* Cell Division (Mitosis)
  + Slowing of cell’s velocity as radius approaches critical radius of mitosis
* Cell death (Apoptosis/ Pressure)
  + Apoptosis: random likelihood of cell death increasing with accordance to cell lifetime
  + Pressure: High pressure scenarios may kill cells (dense packing)
* Gaussian parameters for variation of individual cells
  + Cell Radius
  + Growth Rate