Module 5: Cell fate decisions (model assumptions)

Author: Name

Aim:

- Learn to make implicit model assumptions explicit
- Learn about effect of noise and motility on cell fate decisions

Description:

- Introduce Delta-Notch model and patterning
  - dXi/dt = t/(t+aXj) - Xi + eta
  - Spatial patterning: checkerboard
- Assignment 1:
- Introduce tau
  - Time to decision (tau) depends on noise amplitude
  - Tau is important in context of other timed processes (e.g. lateral stabilization)

Paper:

- de Back W, Zhou JX, Brusch L. 2012, On the role of lateral stabilization during early patterning in the pancreas. J R Soc Interface 10: 20120766. link pdf
- W. de Back, R. Zimm, L. Brusch 2013, Transdifferentiation of Pancreatic Cells by Loss of Contact-mediated Signaling. BMC Systems Biology 7:77. link

Documents:

Morpheus models:

Link to Example page

h MorpheusModel.xml |h

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<MorpheusModel version="1">
    <Description>
        <Title>Example-Model</Title>
    </Description>
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        <Lattice class="linear">
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            <BoundaryConditions>
                <Condition boundary="x" type="periodic"/>
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        </Lattice>
    </Space>
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```
        <StopTime value="100"/>
    </Time>
</MorpheusModel>
```