Phylodynamics Simulation of Phylogenetic Trees

Object Design

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The design of individual based model

The document of Object Design describes the flow of algorithms at the object level. Also, it describes the design of the object, array or the relationship of the objects.

**Output Objects:**

**Data Objects:**

|  |  |
| --- | --- |
| Params | Required parameters |
| VirusesArray | Every virus strains |
| CurrentVirus | Current virus strains |
| Metadata | Column name of viruses |

1.vid

2.birth

3.death

4.parent

5.infectionK

**dat\_viruses**

1.iso\_date

2-301. Ik=1-300

**dat\_sir**

vid

birth

death

parent (sourceVirus)

infectionK

beta (beta(v,k))

initialV

currentV

**CurrentVirus**

**Beta:**[k x 1]

**VirusArray**

tauleap\_singlesir\_ibm\_matrix.m

**Rate properties:**

|  |  |
| --- | --- |
| Rate\_Birth | Birth rate |
| Rate\_Death\_S | Death rate for S |
| Rate\_Death\_I | Death rate for I |
| Rate\_Death\_R | Death rate for R |
| Rate\_Recovery | Recovery rate for I |
| Rate\_Wanning | Wanning rate for R |