**Table S2.**

|  |  |  |  |
| --- | --- | --- | --- |
| Container | Parameter | Description | Value |
| simul | time\_step | time step for integration | 0.01 |
| simul | kT | temperature in energy units | 0.0042 |
| simul | viscosity | viscosity of cytoplasm partially determines mobility of nucleus | 0.9 |
| simul | precondition |   | 0 |
| simul | binary\_output |   | 0 |
| space pombe | geometry | shape of the cell boundary; ‘capsule’ indicates spherocylinder; 2.4 is half the cylinder height; 1.6 is the radius of the hemispheres | **( capsule 2.4 1.6 )****adjusted to change dimensions of cell, see Figure 5** |
| fiber microtubule | rigidity | modulus for bending elasticity | **30 (up to 300)** |
| fiber microtubule | confine | sets forces between fiber and confining space | inside, 200 |
| fiber microtubule | activity |   | dynamic |
| fiber microtubule | unit\_length | length of discrete units of assembly/disassembly | 0.008 |
| fiber microtubule | growing\_speed | speed of assembly | 0.06 |
| fiber microtubule | shrinking\_speed | speed of disassembly | -0.15 |
| fiber microtubule | hydrolysis\_rate | hydrolysis rate of g-units, from which the catastrophe rate is calculated | **0.058 (up to 0.29)** |
| fiber microtubule | growing\_force | characteristic force of polymer assembly, used for force-dependent catastrophes | **1.7 (down to 0.17)** |
| fiber microtubule | shrinking\_fate | what happens when a microtubule reaches the minimum authorized length (below) | rescue |
| fiber microtubule | min\_length | minimum authorized length | 0.5 |
| sphere envelope | point\_mobility | mobility of points on the surface | 0.05 |
| sphere envelope | radius | the radius of the sphere | 1.3 |
| sphere envelope | confine | flag to confine this object | inside, 200 |
| sphere envelope | piston\_effect | if true, use special formula to calculate mobility (presumably as in Foethke, et al.) | 1 |
| bundle microtubule\_bundle | fibers | the name of the fiber in the bundle | microtubule |
| bundle microtubule\_bundle | nb\_fibers | the number of fibers in the bundle | 4 |
| bundle microtubule\_bundle | overlap | the length of the zone where the fibers in the bundle overlap | 0.5 |
| bundle microtubule\_bundle | stiffness | stiffness of the links that connect overlapping fibers | 1000 |
| nucleus nucleus | sphere | name of the sphere | envelope |
| nucleus nucleus | nb\_bundles | number of MTOCs | 4 |
| nucleus nucleus | bundles | the bundles at the MTOCs | microtubule\_bundle |
| nucleus nucleus | stiffness | stiffness of assembly links | 200 |