CompuCell3D 3.4.1 Release Notes

CHANGES:

- New, redesigned CompuCell Player featuring steering capabilities, ability to replay previously saved simulation results, better graphics rendering using VTK and many other improvements. Introduced ability to add new types of user-defined and user-controlled fields which can be rendered in the new player.

- For MacOS we distribute small, but useful application written by David Larson that allows users to pixelize experimental pictures and convert them into PIF initialization files. Users simply "paint" the experimental image and assign cell types to the painted regions.

- Added experimental , external modules that solve subcellular networks models written in SBML. This feature is still in the beta version but seems to integrate with CC3D very well. We will update users on our progress in this respect.

- Ability to run simulations in a silent mode (not using Player). The results are stored in the VTK format and can be post-processed using either CompuCell Player or custom written scripts.

- Renamed Plasticity to Elasticity. All simulations written for CC3D version previous to current and using Plasticity plugins should be updated and change word "Plasticity" to "Elasticity". This naming convention corresponds better to what these plugins implement.

- Restructured source code directory structure

- New reaction-diffusion solver which allows users to specify custom terms and does not require recompilation

- Updated functionality for Elasticity plugins, ContactLocalProduct plugin,

- Numerous bug fixes

KNOWN ISSUES

On linux systems it may happen that while taking screenshots users may get messed up images. This is due to faulty graphics drivers and depending on your graphics card you might not be able to easily fix it. We have tested new player on systems with ATI Radeon series graphics cards and after installing ATI graphics drivers the player works correctly. The problem was unsolved for most popular Intel graphics chips. While providing fixes for this problem seems to be beyond our control we will try update users and suggest possible solutions. One simple solution is to run simulation and instead of taking screenshots save simulation

results in the VTK format. This can be done both in the GUI or silent mode. Then the VTK results can be replayed or post processed using player or custom scripts. Windows and Mac OS versions output screenshots correctly.

Plasticity Plugin (not the Elasticity) might still have bugs. We will fix it in the next version or sooner if there is demand from users