

GETTING STARTED

LUNGSIM V1.2

TO LOAD AND INSPECTION OF THE TREE:

- 1) To load the Lung tree: Select File >> Load Tree Geometry - open a file dialog. Select "Tree file.txt"
- 2) Explore interaction with the 3D model by activating any of the x,y,z icons and rotate using the mouse. This tree shows approx. 10 branching generations
- 3) In "View" >> Activate "Wireframe" to view the skeleton, toggle back by deactivating "Wireframe".
- 4) Select parameters to run a simulation: Select "Simulation >> Simulation Parameters >> Simulation". Default settings shown will take a simulation time of about 10 mins, to get acquainted with the software the "End time" under the "Simulation" tab can be reduced, for example to 1.0 seconds (the software calculates only 2500 time steps compared to 10000 for a complete breathing cycle). Press ok to close the window.
- 5) Select Simulation >> Start Simulation. Mass transport is calculated using an air influx of 21% oxygen. Wait until simulation is complete.
- 6) To open the result file: Select File >> Open Result file - opens a file dialog. Select "out_sim.txt".
- 7) To visualize the dynamics in oxygen mass transport: View >> Result File.
- 8) "View >> View Text information" - the time frame and the scale are displayed.
- 9) Drag the slider, located under the menubar, to observe the change in concentration at different time frames.
- 10) To change the color scale: View >> Color Coding >> Heatmap

TO STORE THE RESULTS:

11) Goto View tab, activate View >> Selections

12) To readout along a user defined geometry, define a path in the model: Select any distal branch (Right-click), and click on "Selection >> Trachea-> active branch". This links all related branches along the defined path.

13) Goto "Analyze >> write results"

14) The file "out_select.txt" is stored onto the harddisk, and can be reviewed with a text editor or imported into a spreadsheet program.

Please refer to the Help >> Content for a detailed description of the functionality of LungSim.
