Lung Anatomy + Particle Deposition (lapd) Mouse Archive

for Modeling and Computational Toxicology

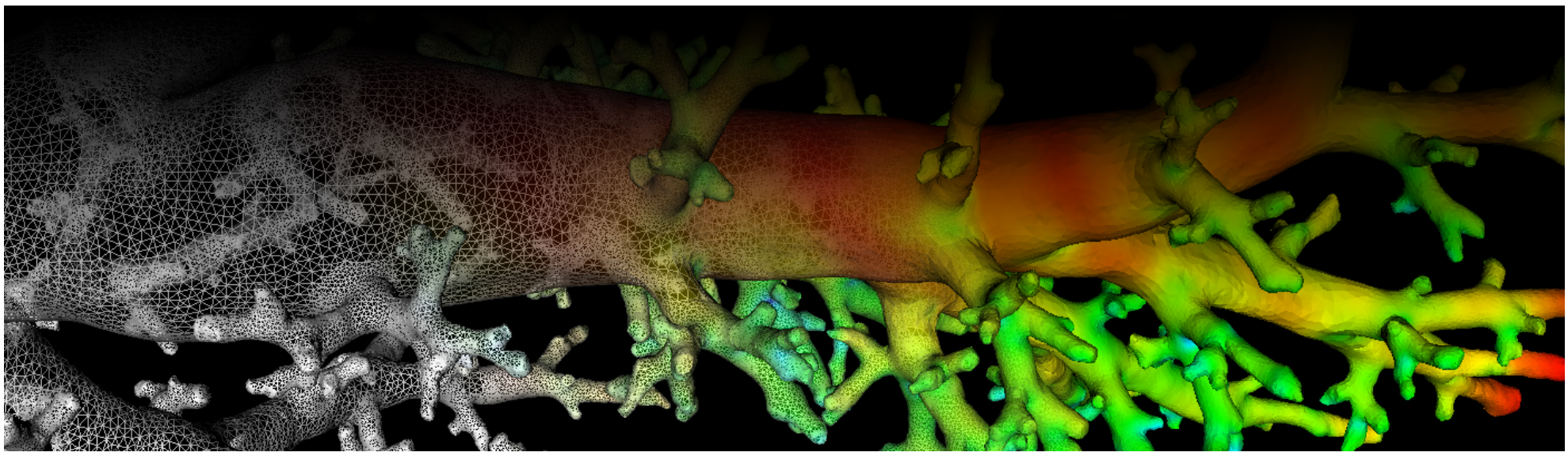

Table *_AirwaySegmentsDeposition.csv

Aerosol deposition measurements near airway wall for each airway segment.

The measurements table contains measurements for each airway segment in *_AirwaySegments.vtk. Related deposition measurements near the airway wall are taken from *_AirwayWallDeposition.vtk. Each row contains the following information for a compartment:

- **label**: unique label of the segment corresponding to region label in *_AirwaySegments.vtk.
- **area**: area of the segment's wall surface in (mm^2)
- **mean, sigma, median, min, max**: Aerosol depositon measurements for the compartment (average, standard deviation, median, min and max value)
- **count**: number of vertices in the wall segment.
- **centroidX, centroidY, centroidZ**: 3d center of gravity of the compartment
- **bbox...**: axis aligned bounding box around the compartment

label	area	mean	sigma
1	17.2296	31.[illegible]31	194.521
2	24.9678	58.1681	313.559
3	24.4073	[illegible]101	1008.22
4	2.56[illegible]	[illegible]	448.014
5	1[illegible]	[illegible]07.43[illegible]	[illegible]021
6	1.5[illegible]	[illegible]255.34[illegible]	[illegible]36
7	[illegible]	[illegible]	[illegible]
8	0.[illegible]	[illegible]255.1[illegible]	[illegible]42.[illegible]
9	1.12063	[illegible]218.581[illegible]	140.606

Code Example

This example shows how to read and interpret deposition measurement tables. It explains the organization of the stored information, shows how to create simple visualizations, identify and plot information.

CompartmentDepositionMeasurements.ipynb hosted with ♥ by GitHub view raw

Particle Deposition Measurements

Particle Deposition Measurements for different partitionings of the lungs/airways are stored in measurement tables: `*_NearAciniDeposition.csv`, `*_SublobesDeposition.csv`, `*_LobesDeposition.csv` and `*_AirwaySegmentsDeposition.csv`.

In the example below we utilize `pandas` for loading the csv files and `matplotlib` for visualization of data.

In [1]:
```
import os, pandas, matplotlib, numpy
import matplotlib.pyplot as plt
```

First, we download some example data from the `lapdMouse` data archive.

In [2]:
```
from lapdMouseUtils import DBUtil
db=DBUtil()
db.downloadFile('m01/m01_NearAciniDeposition.csv')
db.downloadFile('m01/m01_SublobesDeposition.csv')
db.downloadFile('m01/m01_LobesDeposition.csv')
db.downloadFile('m01/m01_AirwaySegmentsDeposition.csv')
```

NearAciniDeposition

Related Data Structures

* AirwaySegments.vtk | * AirwayWallDeposition.vtk | * AirwayTree.meta | * AirwayTreeTable.csv

Related Code Examples

CompartmentDepositionMeasurements.ipynb

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