

Biological models for ECE5430/6340 term projects

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There are two 2D male human models available: one representing a transverse slice across the chest, and the other representing a transverse slice across head. The spatial resolution (cell size) is 1mm x 1mm.

Each model is an ASCII text file, containing one integer number for each 2D cell. The integer number (material index) defines the material or tissue number at that cell's location. The `mat_indices.txt` file tells what index correspond to what tissue (this file is just informational, not strictly needed for the numerical simulation).

The `mat_properties.txt` file describes the dielectric properties of one tissue per line - the first column is the tissue number, the second is the conductivity, and the 3rd is the relative permittivity. All the material properties are for 402MHz, but properties for other frequencies can be provided if your project requires so.

You can load and visualize a model in Matlab using:

```
m = load("chest_slice.txt");  
imagesc(m);
```

The `chest_slice.txt` is the actual chest model, having the material indexes to describe the chest. Similarly, the `head_slice.txt` describes a model of the head. The `mat_indices.txt` and `mat_properties.txt` files are shared between both models.

The rest of the files (*.png) are images of the models to be able to see how they are, using different color maps.