Scientific Computing & Visualization
Lab 5

Building my own transfer function for jet data set

David Mauricio Delgado Ruiz
201422209

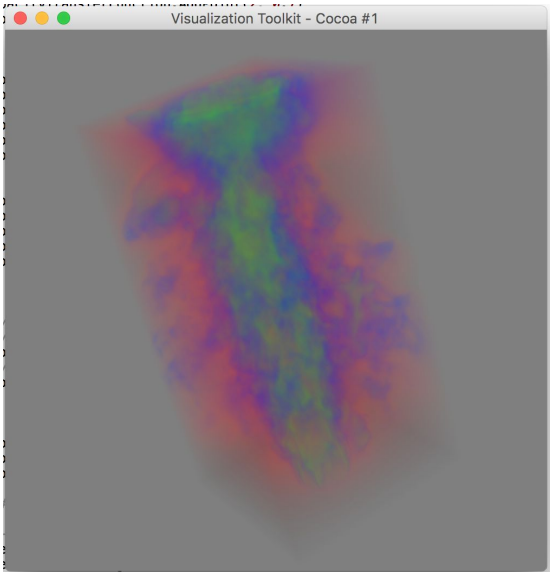
The following code defines my Transfer function, both for color and opacity of the visualization:

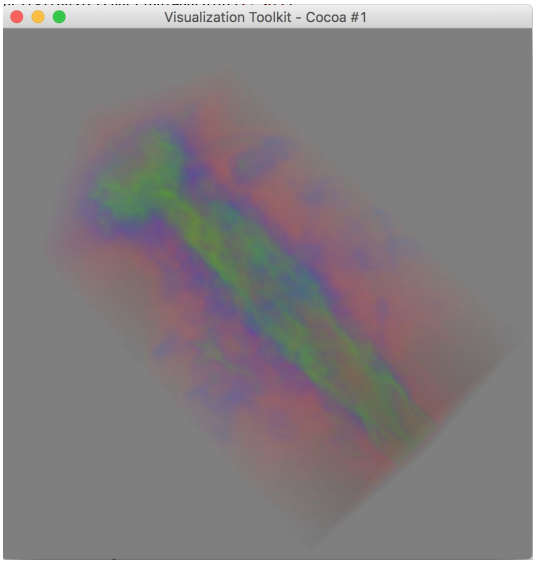
```
# Create transfer mapping scalar value to opacity
opacityTransferFunction = vtk.vtkPiecewiseFunction()
opacityTransferFunction.AddPoint(0, 0.2)
#opacityTransferFunction.AddPoint(14, 0.0)

opacityTransferFunction.AddPoint(2, 0.7)
opacityTransferFunction.AddPoint(5, 0.8)
opacityTransferFunction.AddPoint(10, 0.9)

opacityTransferFunction.AddPoint(13, 1.3)
opacityTransferFunction.AddPoint(14, 2.1)


# Create transfer mapping scalar value to color
colorTransferFunction = vtk.vtkColorTransferFunction()
colorTransferFunction.AddRGBPoint(0.0, 0.2, 0.0, 0.0)
colorTransferFunction.AddRGBPoint(0.5, 1.7, 0.0, 0.0)
colorTransferFunction.AddRGBPoint(2.0, 0.0, 0.0, 2.1)
colorTransferFunction.AddRGBPoint(6.0, 0.0, 2.2, 0.0)
colorTransferFunction.AddRGBPoint(14.0, 0.0, 3.1, 0.0)
```

As there is not a formula to design the perfect or useful Color transfer function, I started experimenting until I found a combination of parameters I believe allows us to visualize the data and gain some insights about it.

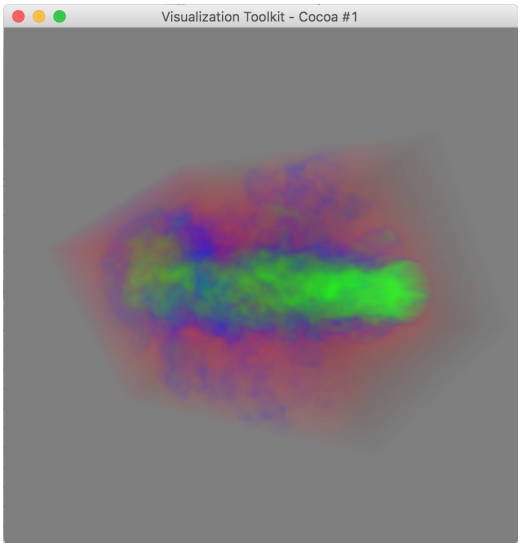
The exploration process was the following:

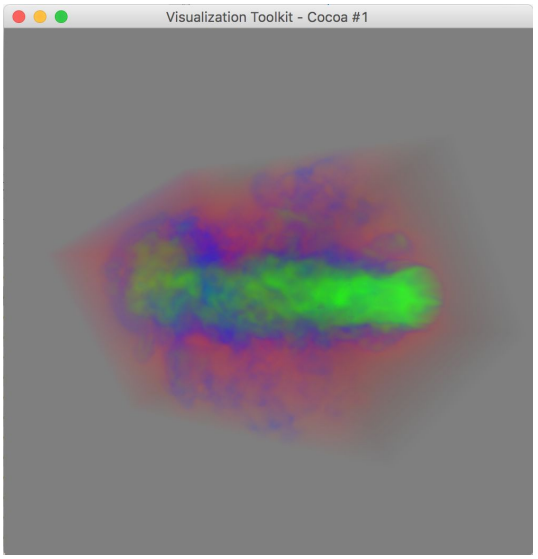
First major version:



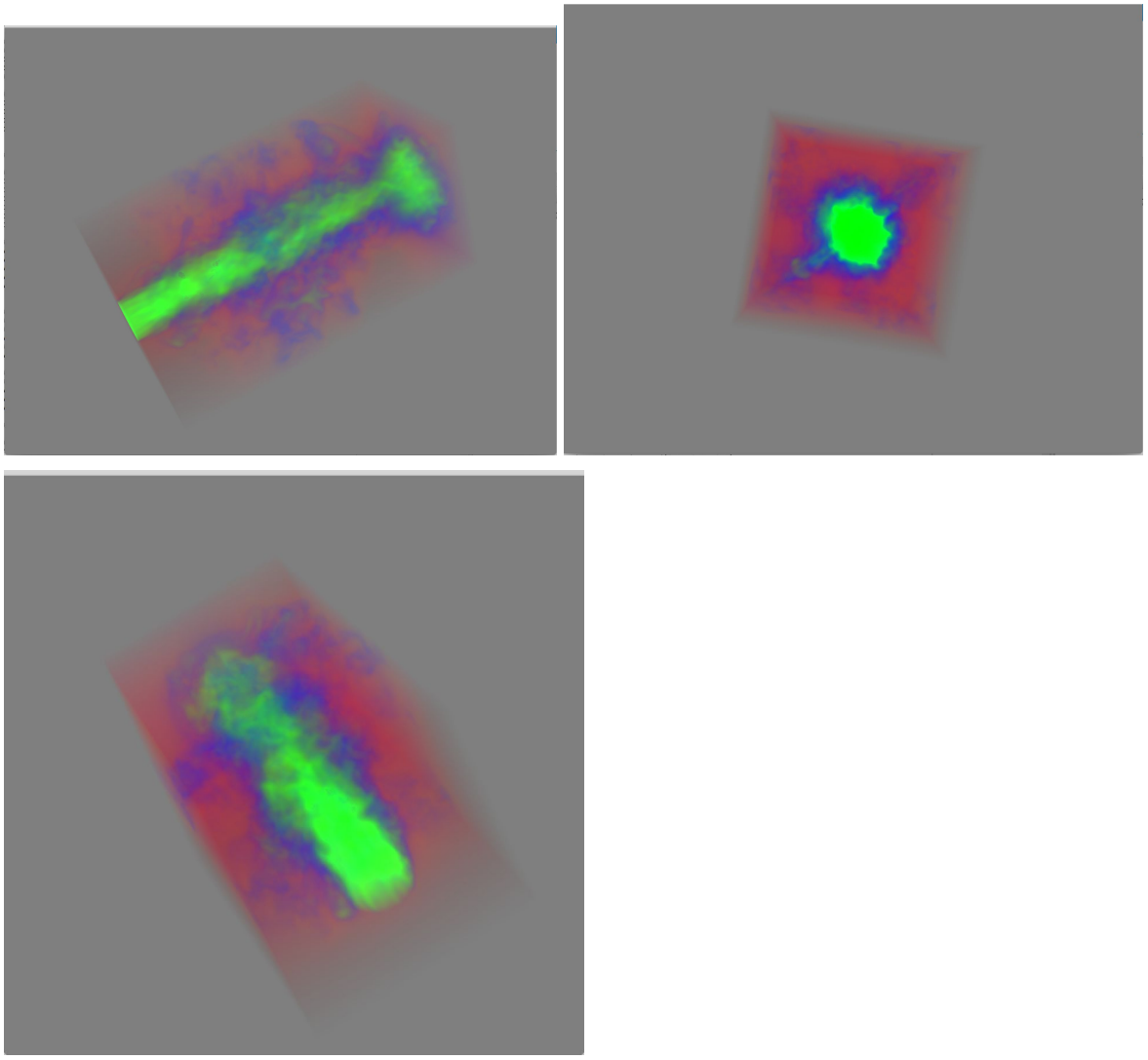


Second Version:





Third version



Final result: