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ASTE 546  
HW 8

Add new “addTubeBox” function:

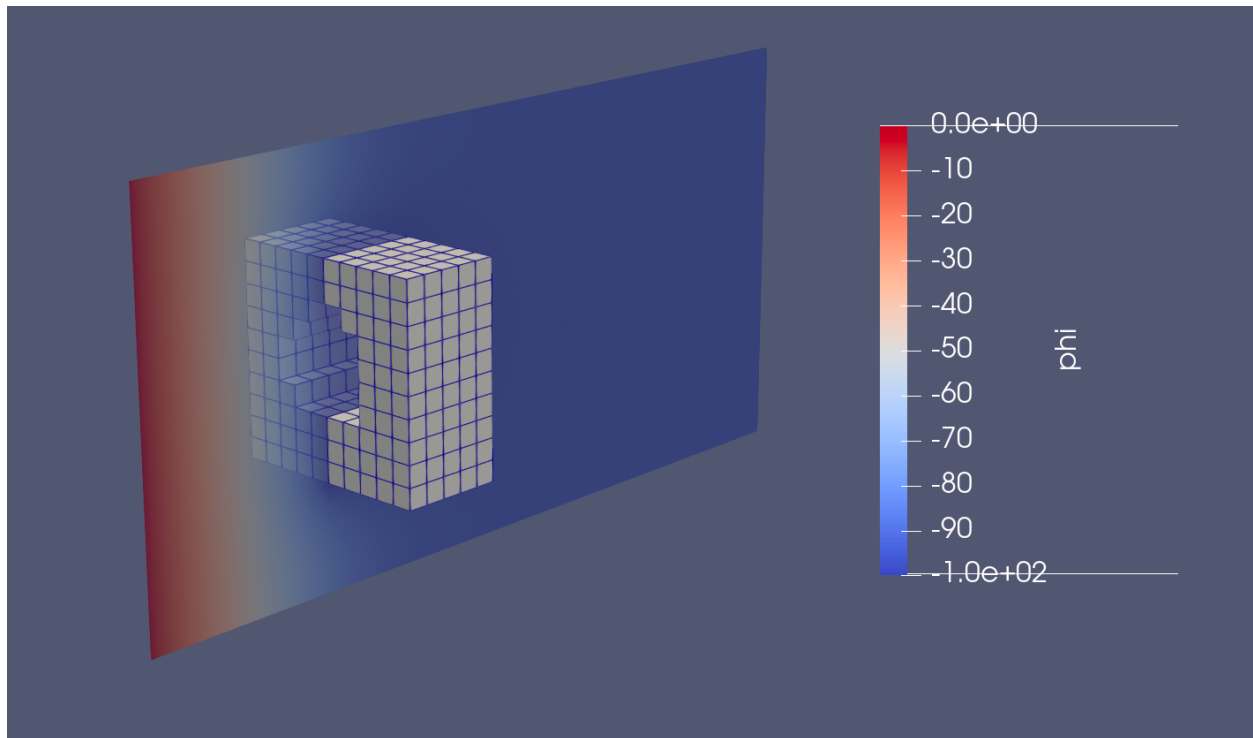
```
void World::addTubeBox(double3 min, double3 max, double holeRadius, double
phi_object){

    for (int i=0;i<ni;i++)
        for (int j=0;j<nj;j++)
            for (int k=0;k<nk;k++)
            {
                /*compute node position*/
                double3 x = pos(i,j,k);
                if (inBox(x, min, max, holeRadius))
                {
                    object_id[i][j][k] = 1;
                    phi[i][j][k] = phi_object;
                }
            }
}
```

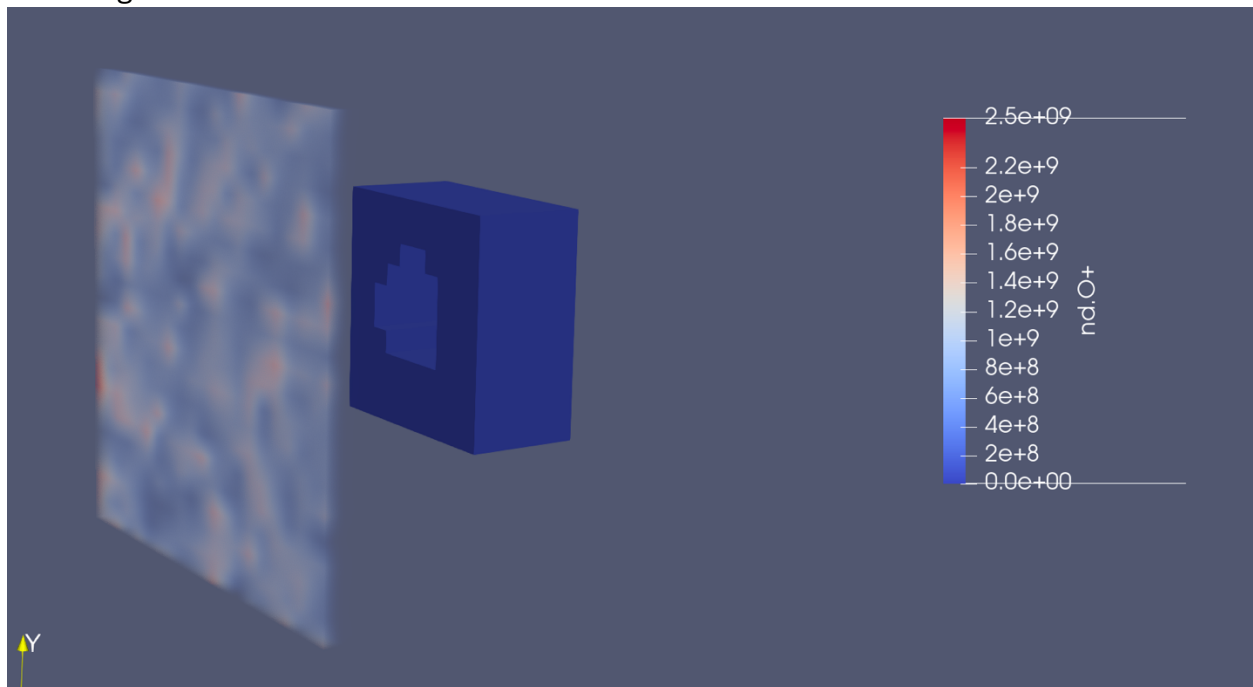
Change “inSphere” to “inBox”

```
bool World::inBox(double3 point, double3 min, double3 max, double holeRadius) {
    //returns TRUE when in the box
    double r_mag2;
    double cyl_mag2;
    r_mag2 = (point[0] * point[0]) + (point[1] * point[1] );
    cyl_mag2 = (holeRadius * holeRadius);
    if ( point[0] >= min[0] && point[0] <= max[0] &&
        point[1] >= min[1] && point[1] <= max[1] &&
        point[2] >= min[2] && point[2] <= max[2] &&
        r_mag2 >= cyl_mag2) return true;
    else return false;
}
```

I was able to make this with the Slice and Threshold filters.



But was not able to replicate the image for nd.O+, when I map nd.O+ as a volume I get the following:



Is there another filter I should be using?