Photocathode

1 Full Geometry

- full geometry including the insulator
- patch 10 is insulator material and patches 7/8 should also partially be insulator
- plots of electrostatic potential, electric field and convergence studies exist
- visible patch boundaries in field plot did not vanish completely but improve significantly

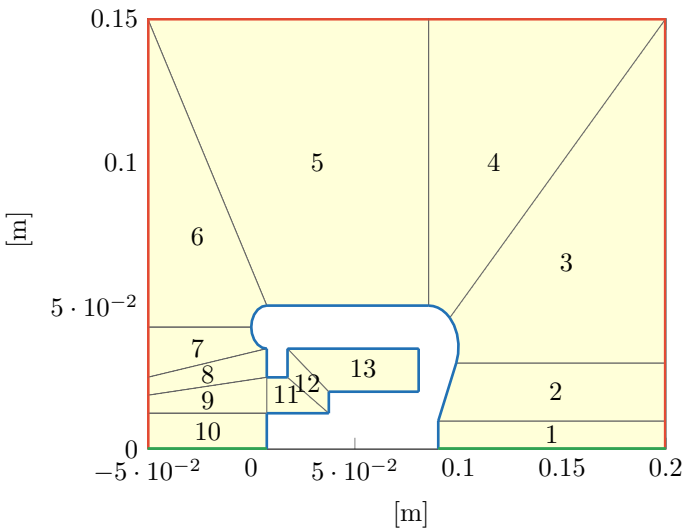

Figure 1: full geometry including patches and boundary conditions

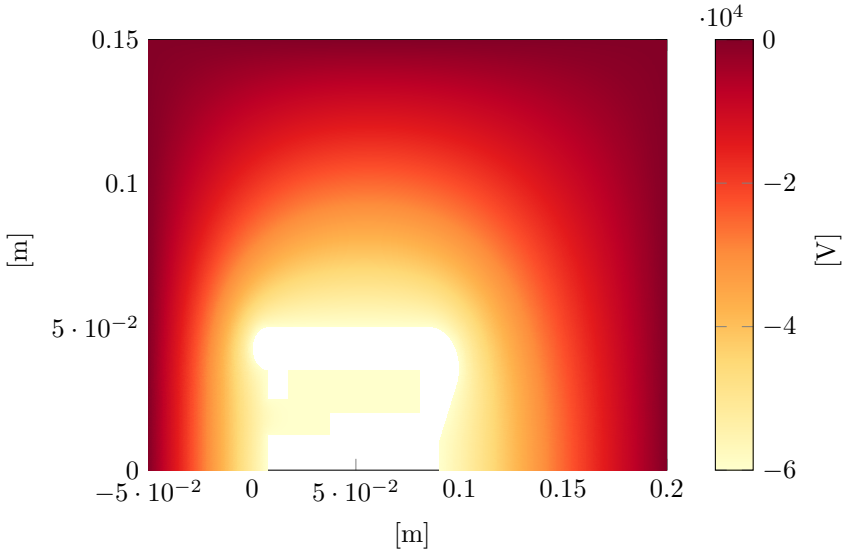

Figure 2: electrostatic potential with $p = 3$ nsub=64

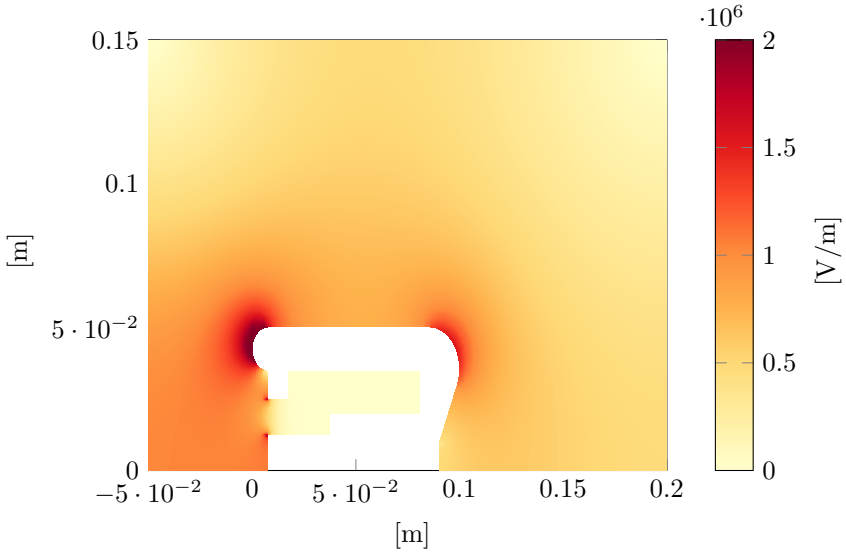

Figure 3: absolute value of electric field with $p = 3$ nsub=64

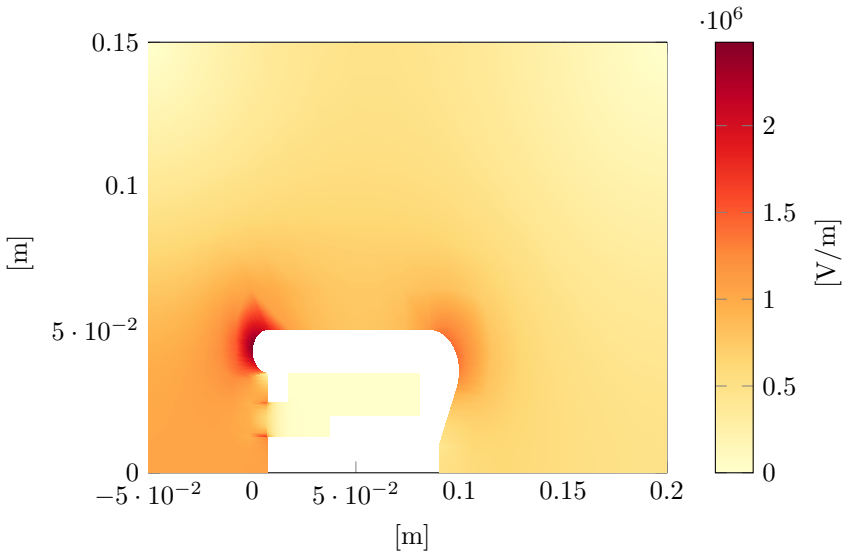

Figure 4: absolute value of electric field with $p = 2$ nsub=8

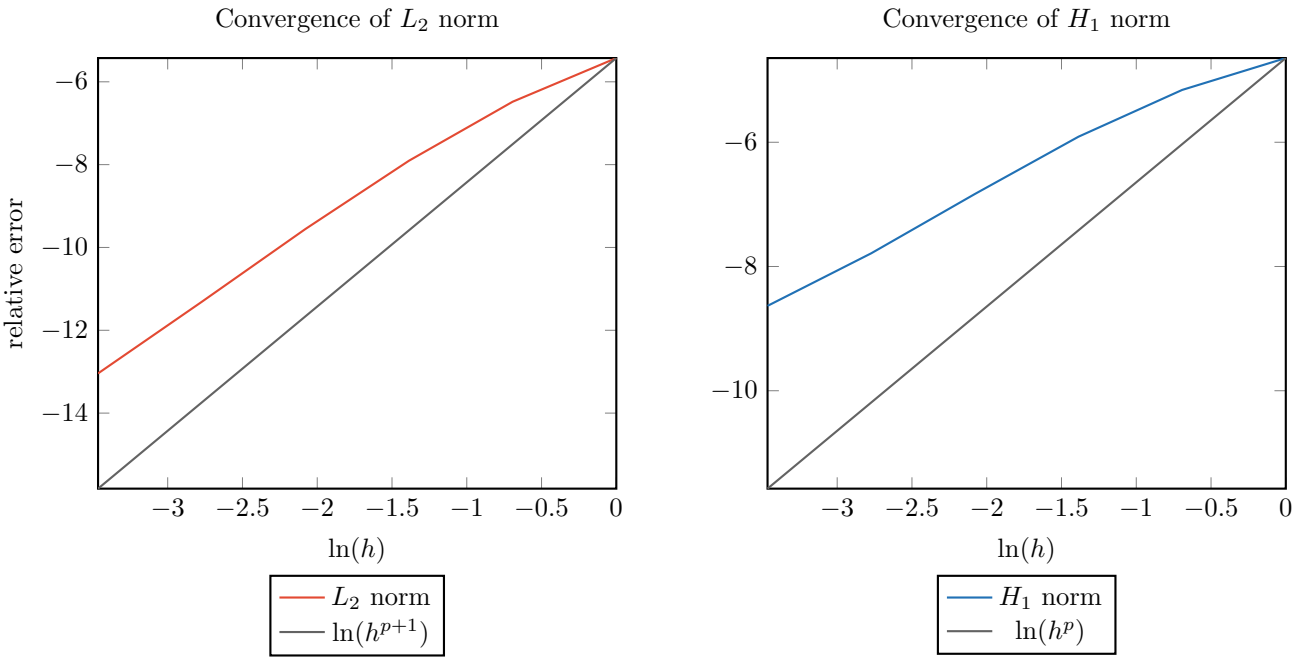

Figure 5: reference uses $p = 3$ nsub=64, relative error uses maximum potential/field value

2 Reduced Geometry

- reduced geometry may be useful for tracking since the back part has almost no influence on the field in the front

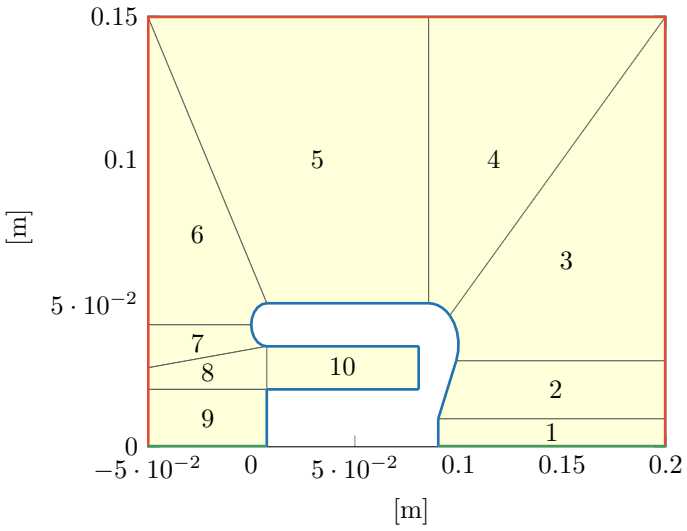

Figure 6: reduced geometry including patches and boundary conditions

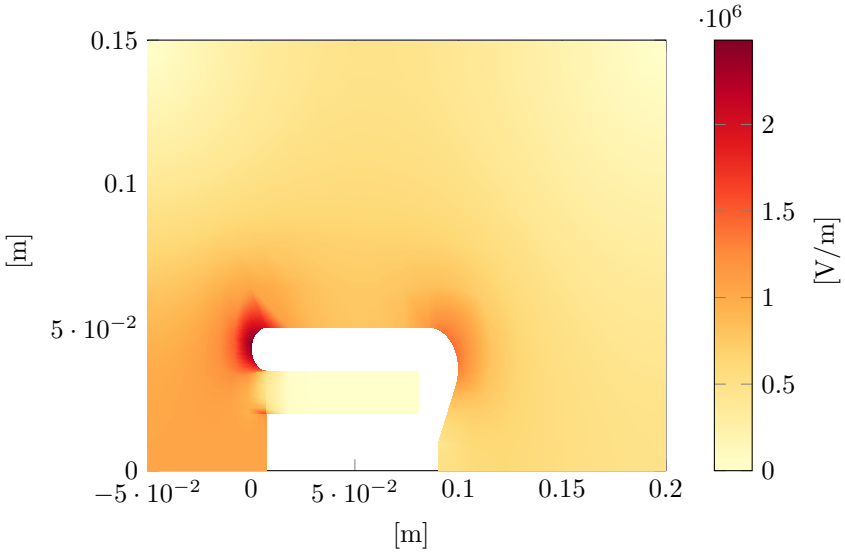

Figure 7: absolute value of electric field with $p = 2$ nsub=8