

# Update on VSim simulations

## - Electrostatic field -

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# VSim on SCARF

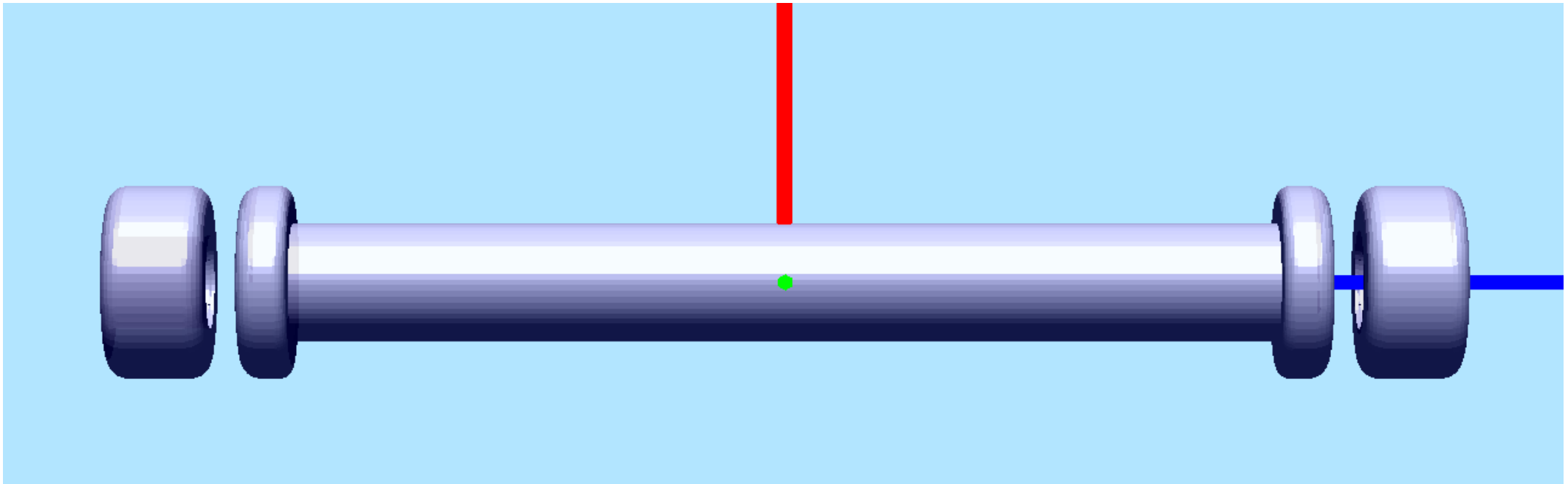
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- 3 licenses for Visual Setup available (both VSim 9.0.2 and 10.0.0)
  - Only run on a specific node
- Started v1 simulation in Visual Setup
  - Could not find a way to assign boundary conditions to user-defined geometries in text-based setup
  - Setup is relatively slow due to working through a ssh connection
- Visualisation tab still with issues
  - Alternative: import .h5 files into Python for analysis and plotting

# Lens geometry

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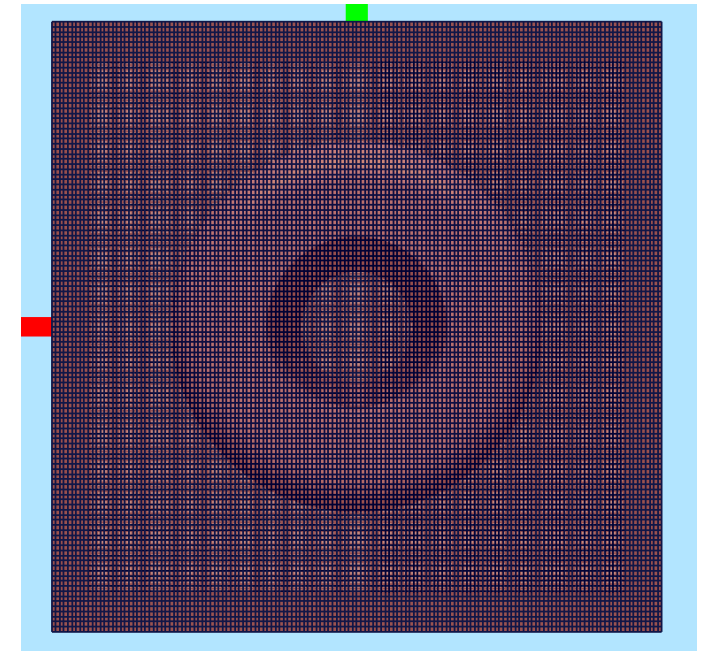
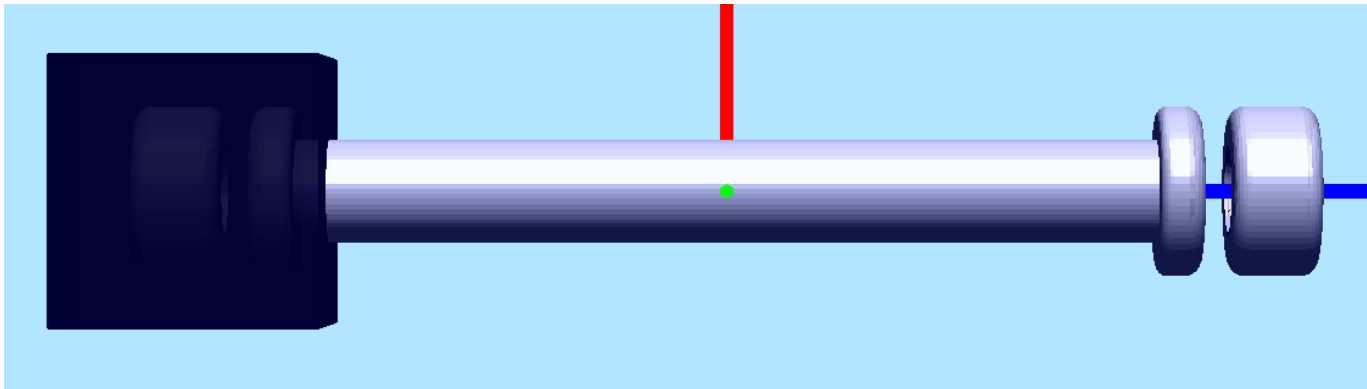
- Built from available primitives: pipe, torus
- 3D visualisation limited – only x,y,z perspective view (no cross-section view)



# Electrostatic simulation

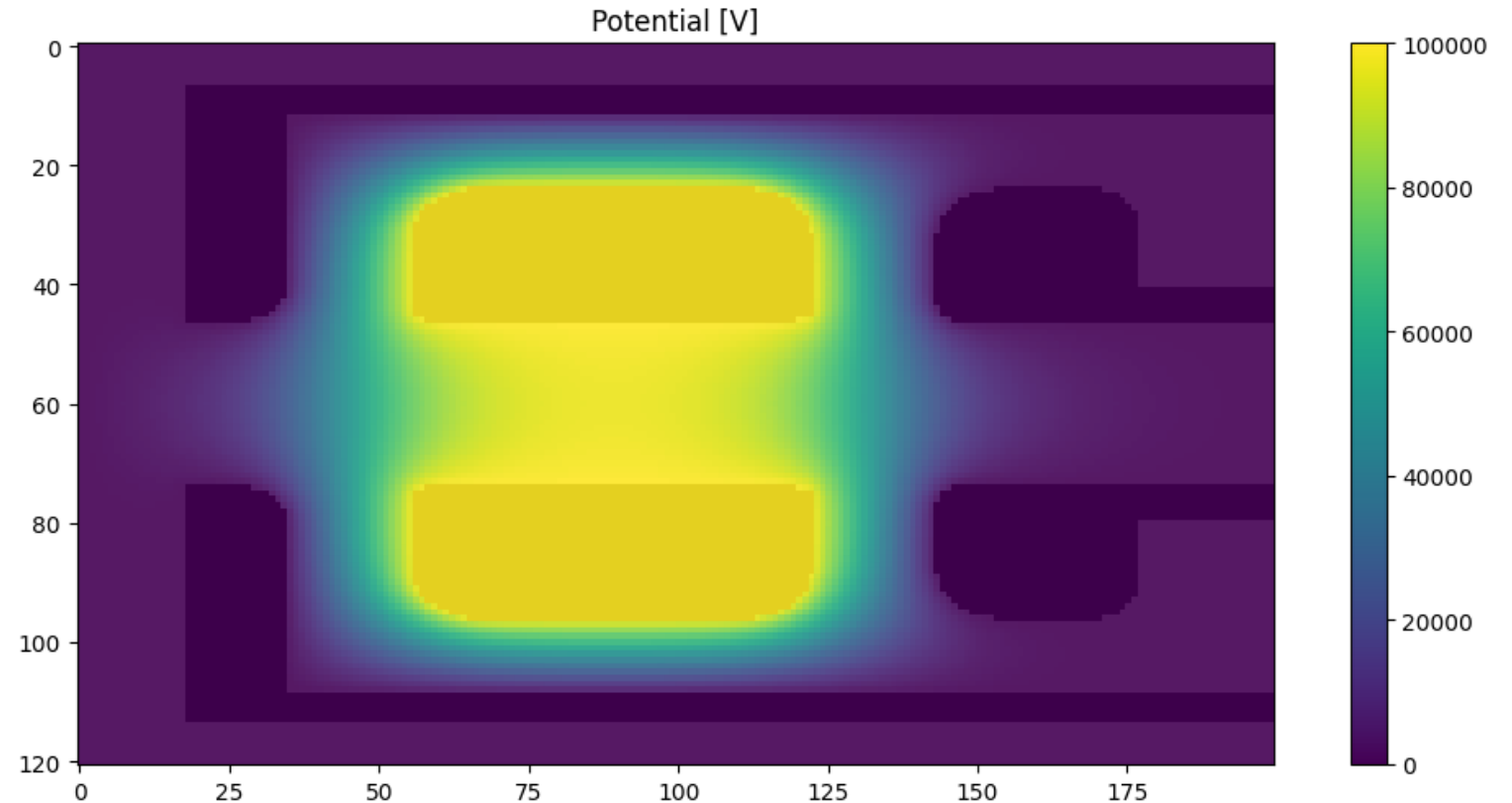
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- Simulate only one end (24cm x 24cm x 30cm)
- Grid size limited by available memory
  - Need to explore available nodes on SCARF (or how to use more memory)
  - Current grid 120 x 120 x 200 nodes



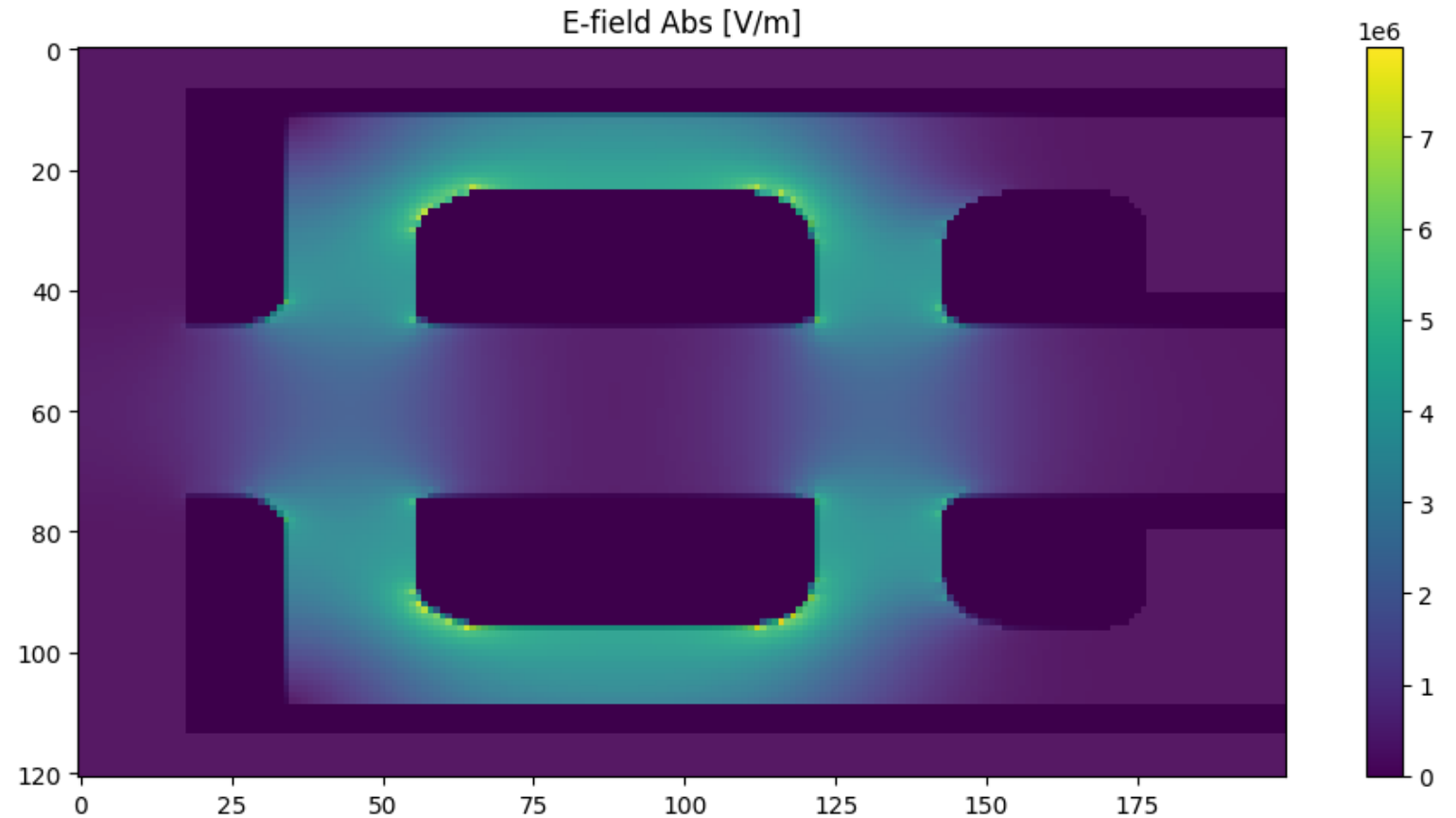
# Electrostatic potential

- Geometry overlaid on top of the colormap
- Cathode potential was set to 100 kV

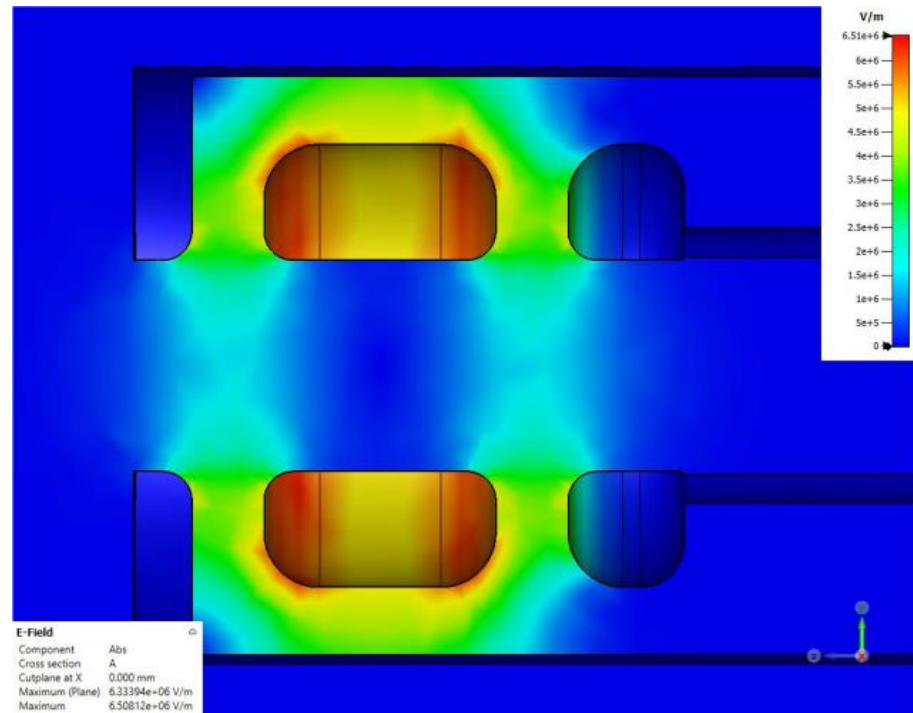


# Electrostatic field

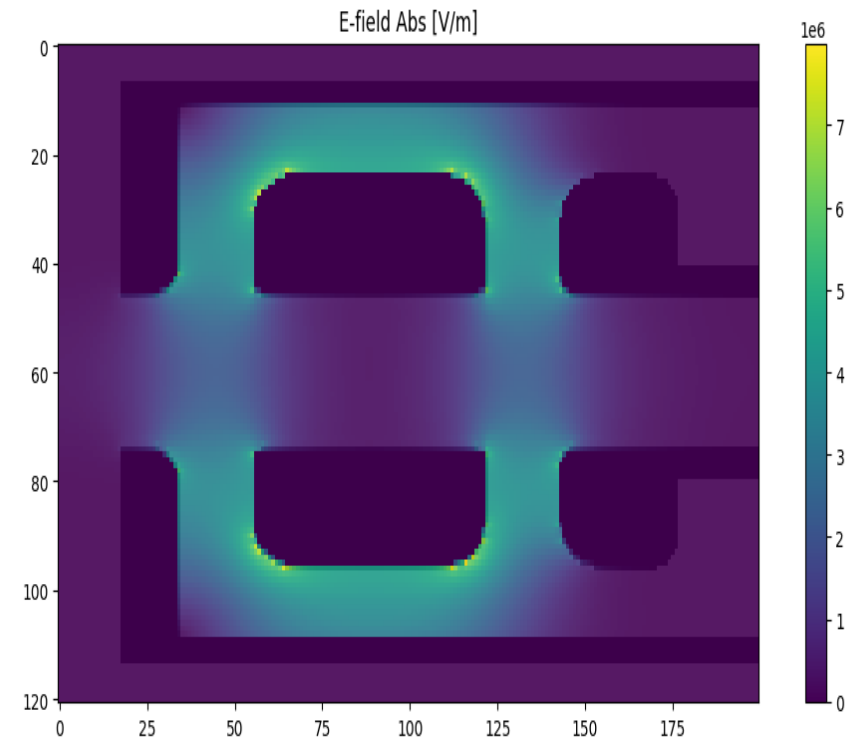
- Geometry overlaid on top of the colormap
- Cathode potential was set to 100 kV
- Max value:  $7.99 \times 10^6$



# Comparison to previous specifications



- Previous specifications from CW
- Max value:  $6.51 \times 10^6$  V/m



- Considerably lower resolution
- Radii of curvature not exactly matched
- Max value:  $7.99 \times 10^6$  V/m