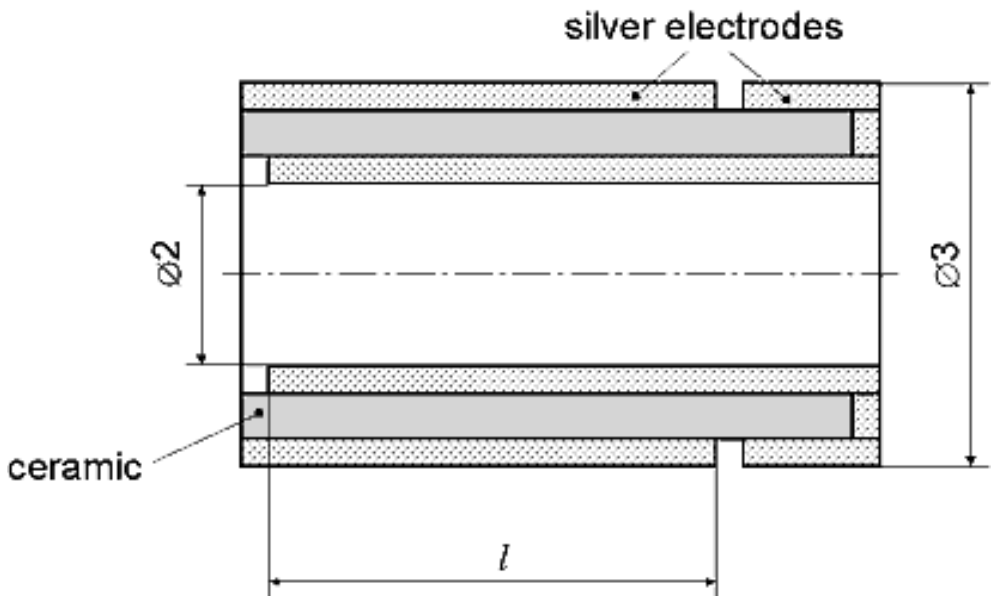# QuickField simulation report

Cylindrical capacitor

Simulation of the cylindrical capacitor. This is an example problem analysis performed with QuickField software.

This automatically generated document consists of several sections, which specify the problem setup and finite element analysis simulation results. Navigation links in the top of each page lead to corresponding sections of this report.

Problem description and QuickField simulation files:
https://quickfield.com/advanced/acelec2.htm

Problem info

Problem type: AC Conduction , frequency: 1000 Hz,
Geometry model class: Axisymmetric
Problem database file names:

- Problem: *ACElec2.pbm*
- Geometry: *Acelec2.mod*
- Material Data: *Acelec2.dec*
- Material Data 2 (library): *none*
- Electric circuit: *none*

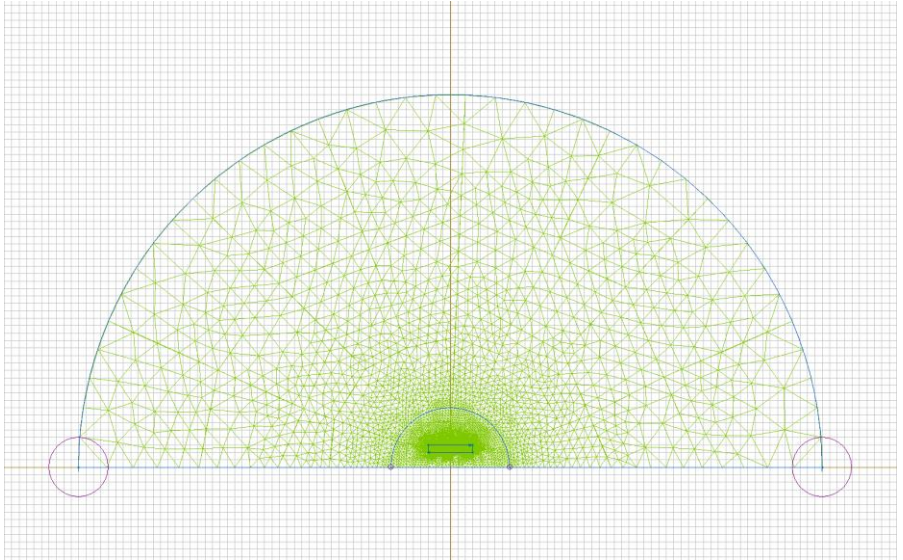Results taken from other problems:

- *none*

Geometry model

Table 1. Geometry model statistics

	With Label	Total
Blocks	2	3
Edges	4	12
Vertices	2	11

Number of nodes: 28537.

Labelled objects

There are following labelled objects in the geometry model (Material Data file could contain more labels, but only those labels that assigned to geometric objects are listed)

Blocks:	Edges:	Vertices:
• ceramic	• U+	• q-
• air	• axis of rotation	• q+
•	• zero field	•
	• U-	
	•	

Detailed information about each label is listed below.

Labelled objects: block "ceramic"
There are (1) objects with this label

Relative electric permittivity eps_x=6, eps_y=6
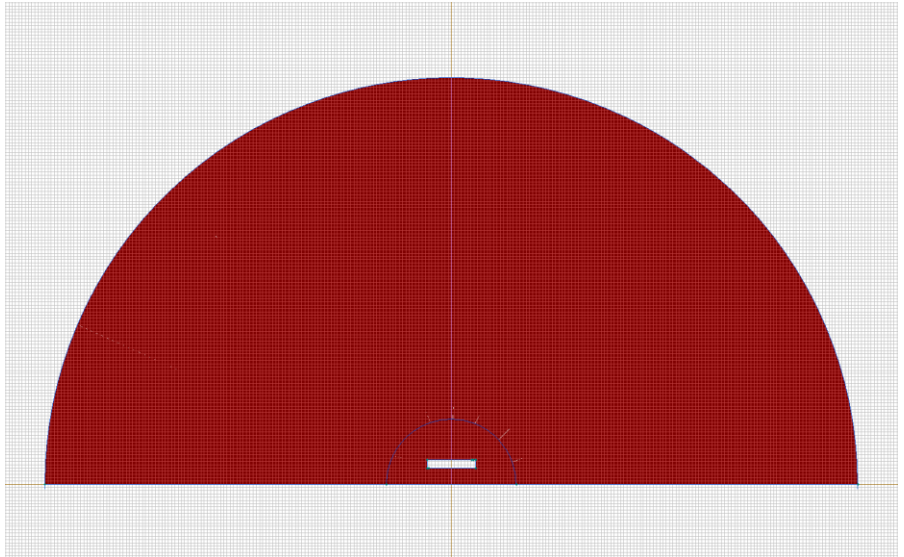Electrical conductivity sigma_x=0.00000001 [S/m],
sigma_y=0.00000001 [S/m]
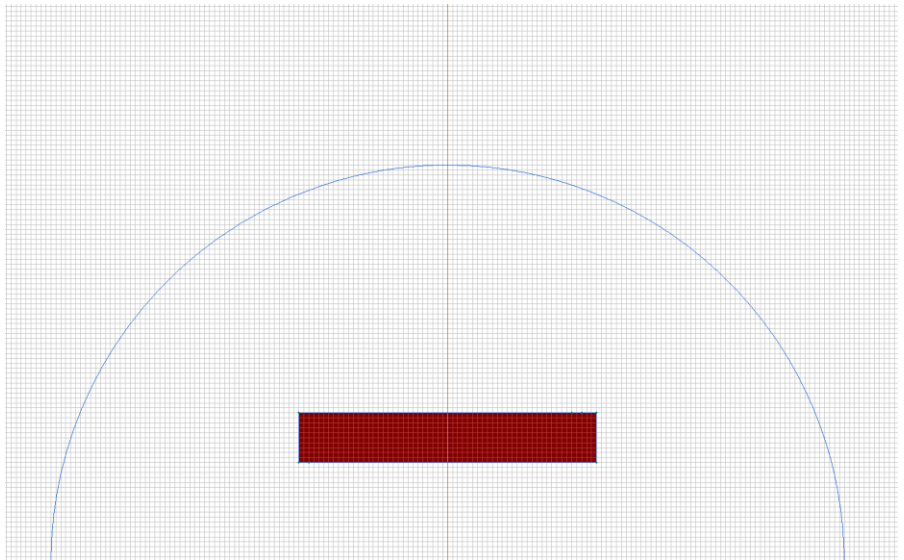
Labelled objects: block "air"
There are (2) objects with this label
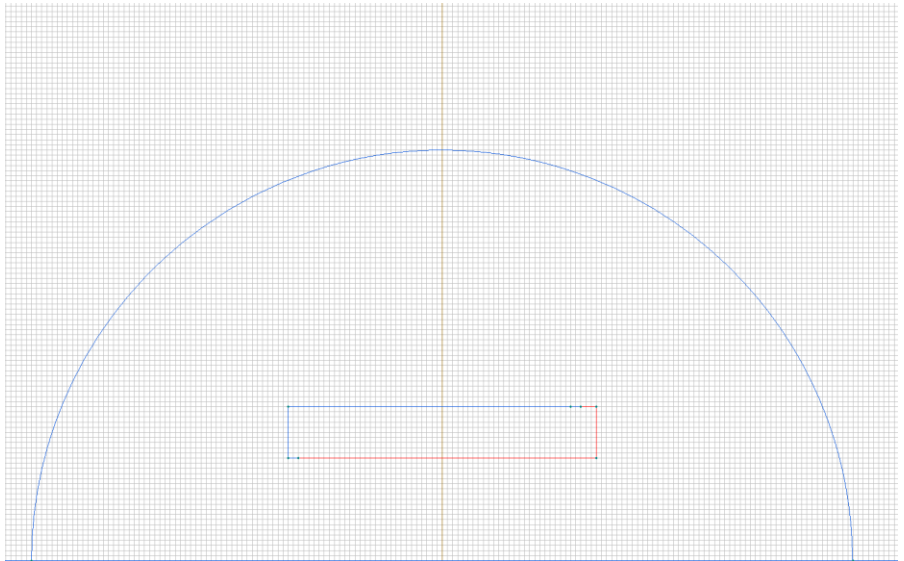
Relative electric permittivity eps_x=1, eps_y=1
Electrical conductivity sigma_x=0 [S/m], sigma_y=0 [S/m]

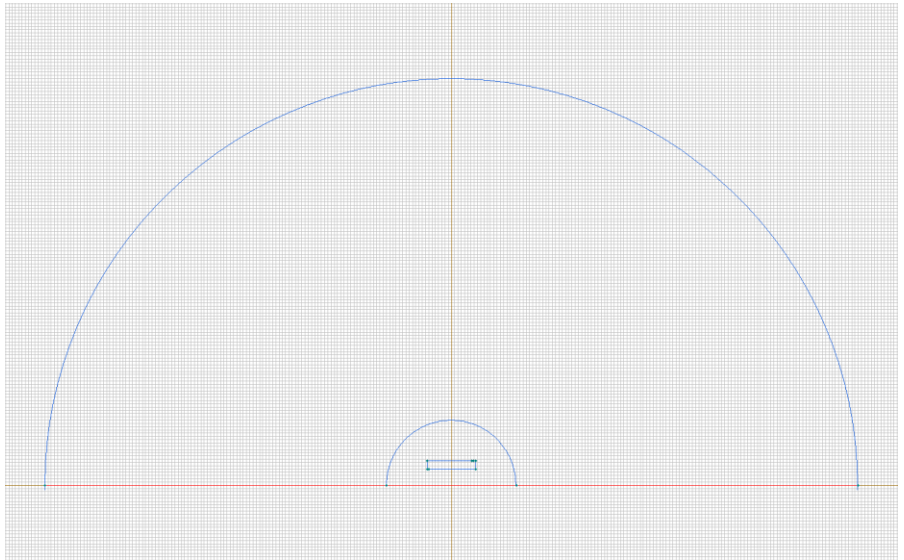## Labelled objects: edge "U+"
There are (3) objects with this label

Voltage: U=5 [V], phase 0 [deg]

Labelled objects: edge "axis of rotation"
There are (3) objects with this label

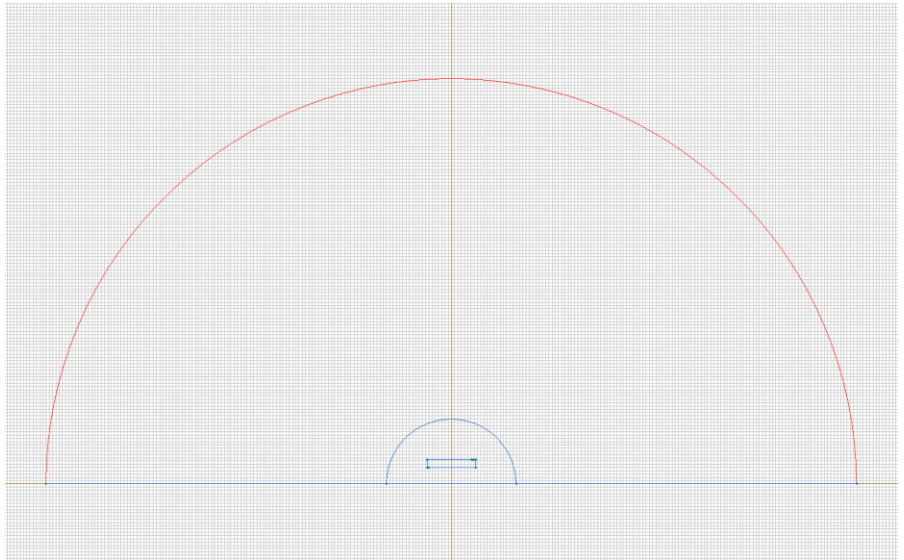## Normal current density: jn=0 [A/m2], phase 0 [deg]

Labelled objects: edge "zero field"
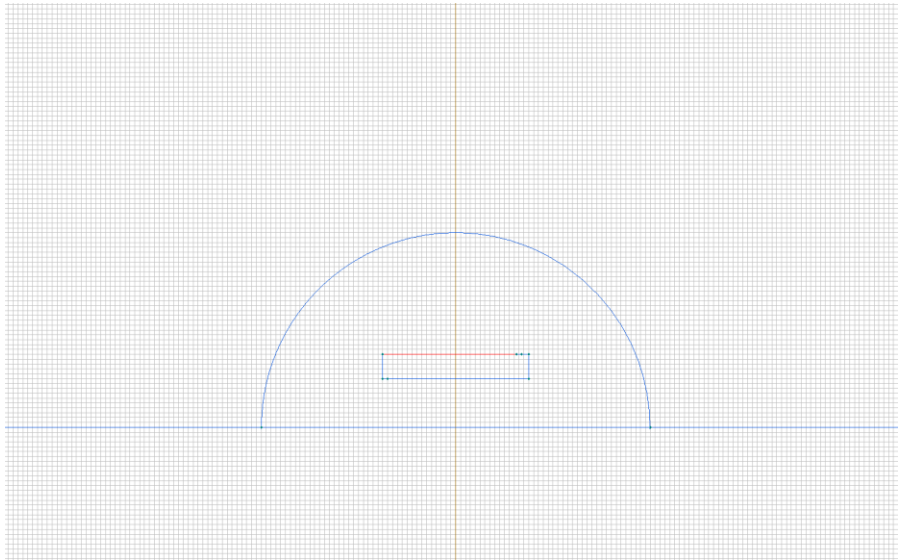There are (1) objects with this label

No material data (boundary conditions) are specified

Labelled objects: edge "U-"
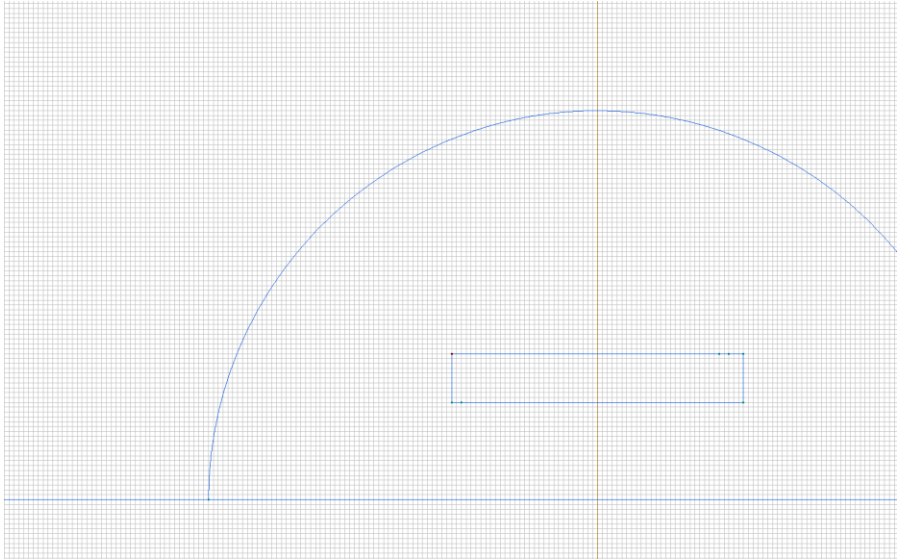There are (1) objects with this label

Voltage: U=-5 [V], phase 0 [deg]

Labelled objects: vertex "q-"
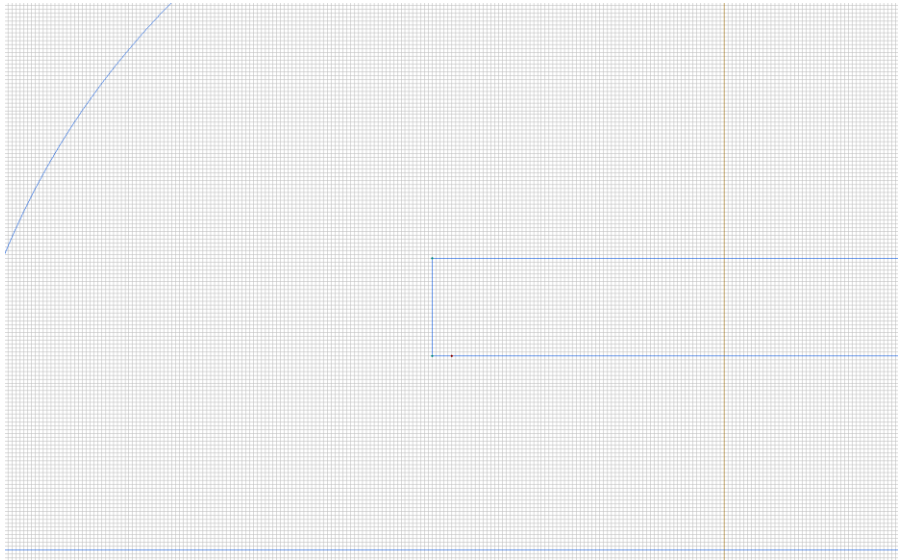There are (1) objects with this label

No material data (boundary conditions) are specified
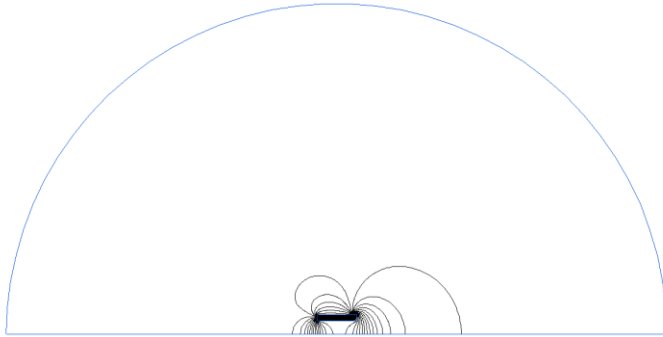
Labelled objects: vertex "q+"
There are (1) objects with this label

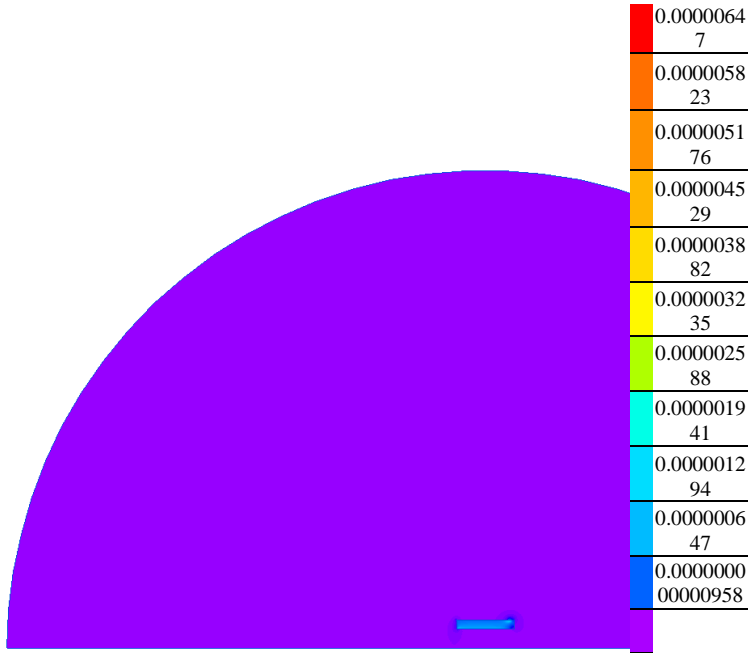No material data (boundary conditions) are specified

Results

Field lines

Results

Color map of Electric induction |D| [C/m2]

	0.00000647
	0.000005823
	0.000005176
	0.000004529
	0.000003882
	0.000003235
	0.000002588
	0.000001941
	0.000001294
	0.000000647
	0.00000000000958

Nonlinear dependencies

No non-linear dependencies are used in this problem data