# Problem info

Problem type: AC Magnetics , frequency: 50 Hz,
Geometry model class: Plane-Parallel
Problem database file names:

- Problem: *Polarization_imped.pbm*
- Geometry: *Polarization_imped.mod*
- Material Data: *Polarization_imped.dhe*
- Material Data 2 (library): *none*
- Electric circuit: *Polarization-Imped.qcr*

Results taken from other problems:

- *none*

# Geometry model

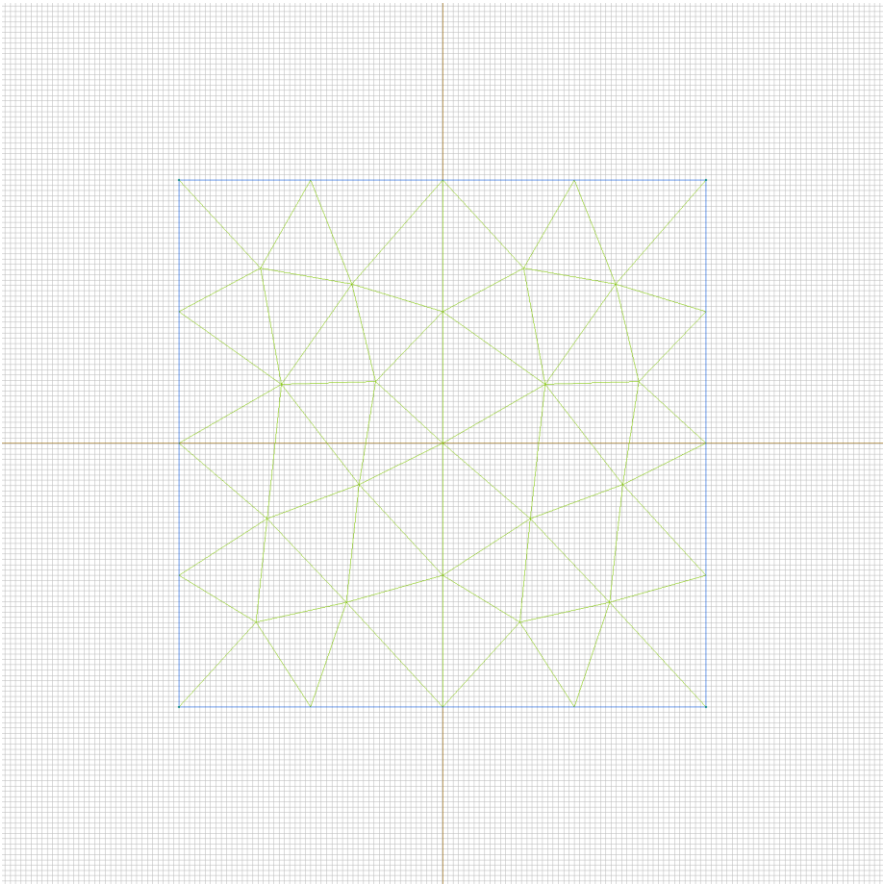


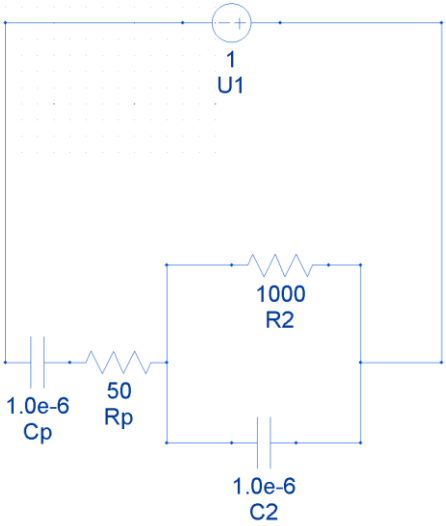
Table 1. Geometry model statistics

| | With Label | Total |
|---|---|---|
| Blocks | 1 | 1 |
| Edges | 1 | 4 |
| Vertices | 0 | 4 |

Number of nodes: 35.

# Electric circuit

Coupled electric circuit




**Circuit elements:**

Capacitor C2=0.000001 [F]
Resistor R2=1000 [Ohm]
Resistor Rp=50 [Ohm]
Capacitor Cp=0.000001 [F]
Voltage source U1=1 [V] 0 [deg]

# 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)

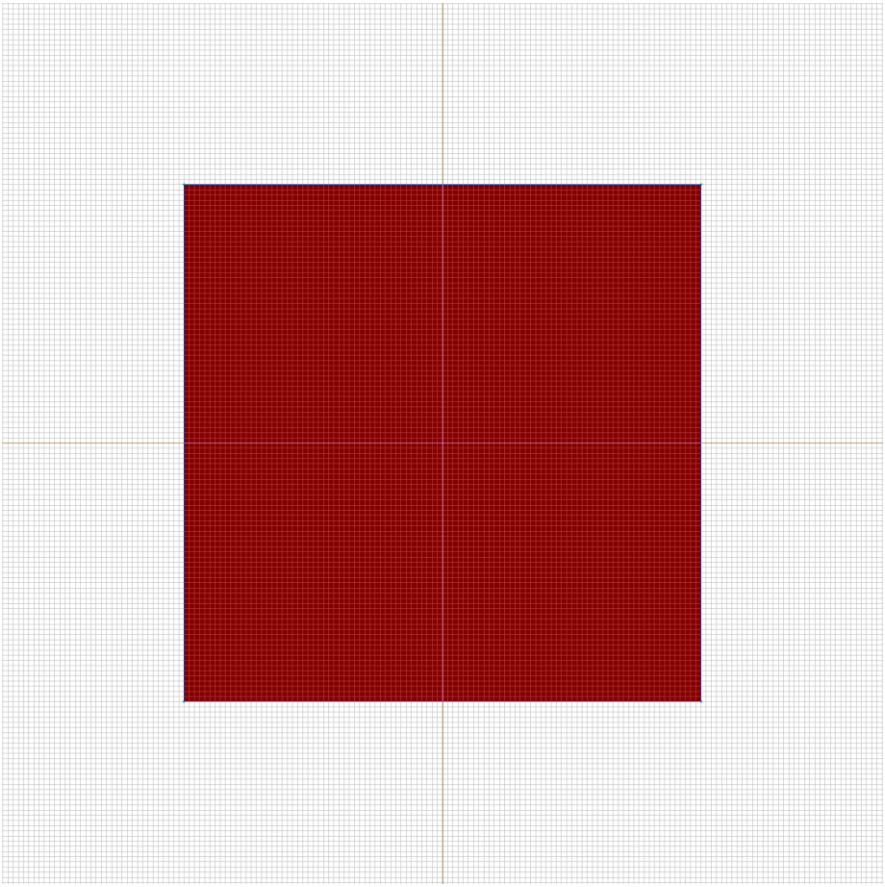
| Blocks: | Edges: | Vertices: |
|---|---|---|
| • air<br>• | • edge<br>• | |

Detailed information about each label is listed below.

# Labelled objects: block "air"

There are (1) objects with this label

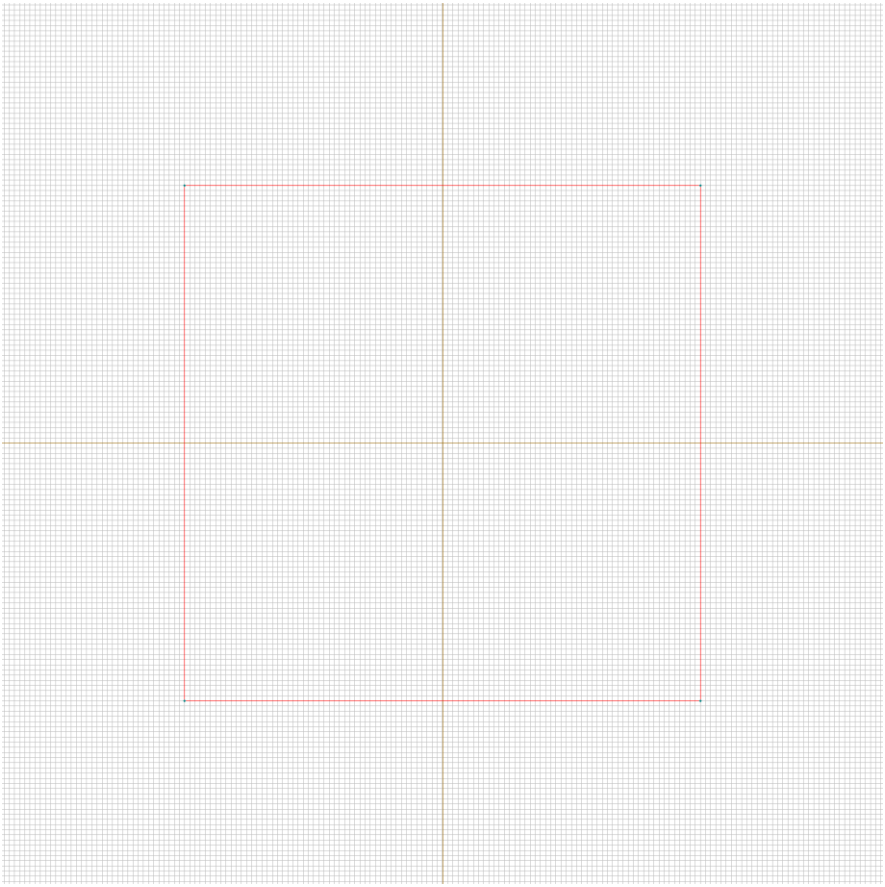
Relative magnetic permeability: mu_x=1, mu_y=1
Electric conductivity: sigma=0 [S/m]
Current density: j=0 [A/m2], phase 0 [deg]
Conductor's connection: in parallel



# Labelled objects: edge "edge"

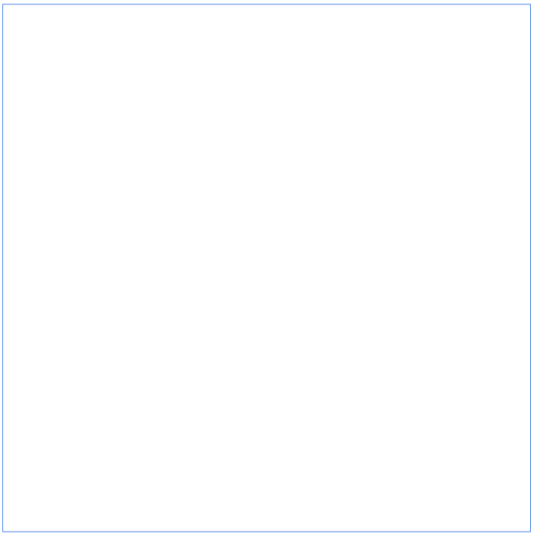
There are (4) objects with this label

Magnetic potential: A=1 [Wb/m], phase 0 [deg]



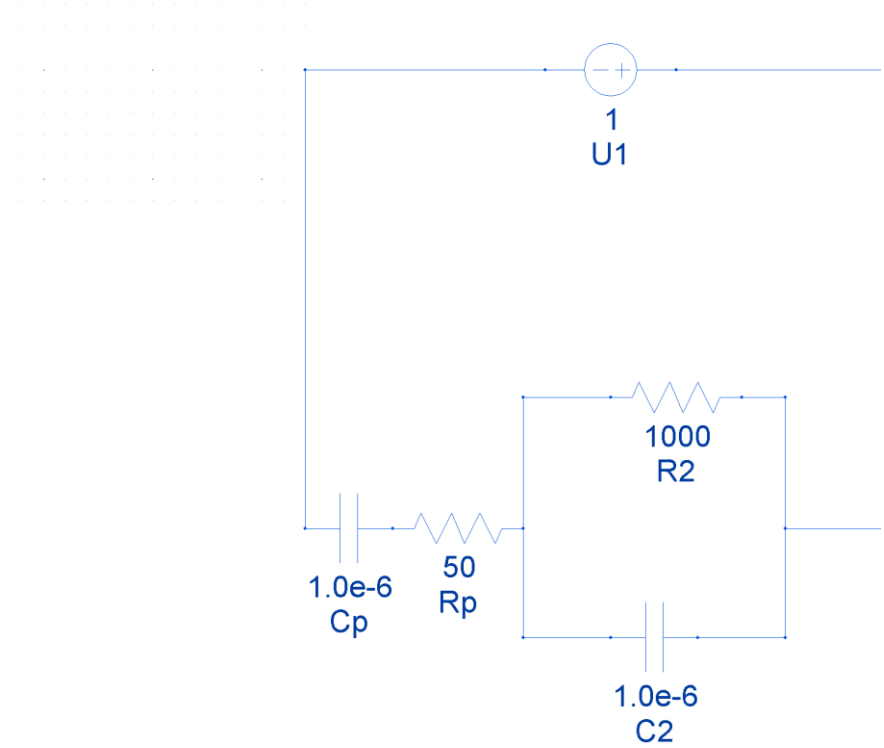
# Results

Field lines



# Results

Electric circuit currents




**Circuit elements:**

C2. I=0.00008327 [A], phase=-32.91 [deg]

R2. I=0.00026505 [A], phase=-122.91 [deg]

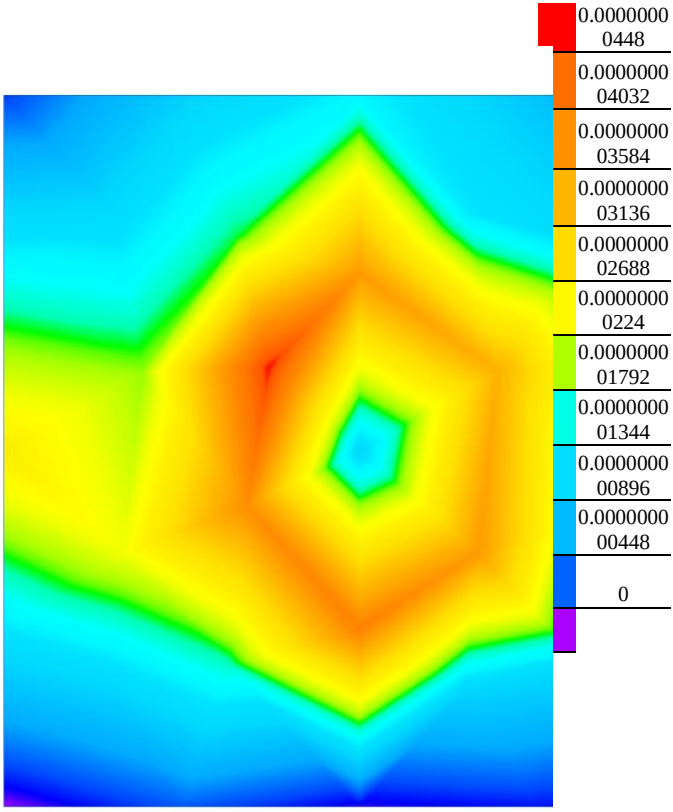
Rp. I=0.00027782 [A], phase=-105.47 [deg]

Cp. I=0.00027782 [A], phase=-105.47 [deg]

U1. I=0.00027782 [A], phase=74.53 [deg]

# Results

Color map of Strength |H| [A/m]



# Nonlinear dependencies

No non-linear dependencies are used in this problem data