Problem info

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

- Problem: *Gap_Junction.pbm*
- Geometry: *Gap_junction.mod*
- Material Data: *Gap_junction.dhe*
- Material Data 2 (library): *none*
- Electric circuit: *Gap_Junction.qcr*

Results taken from other problems:

- *none*

Geometry model

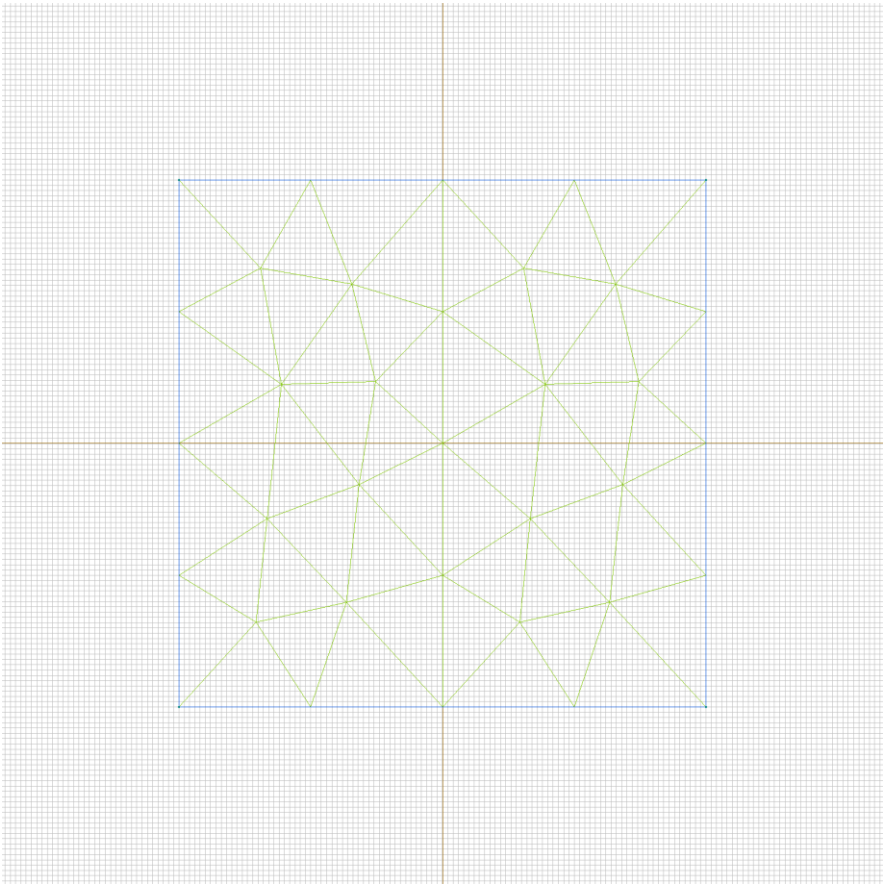


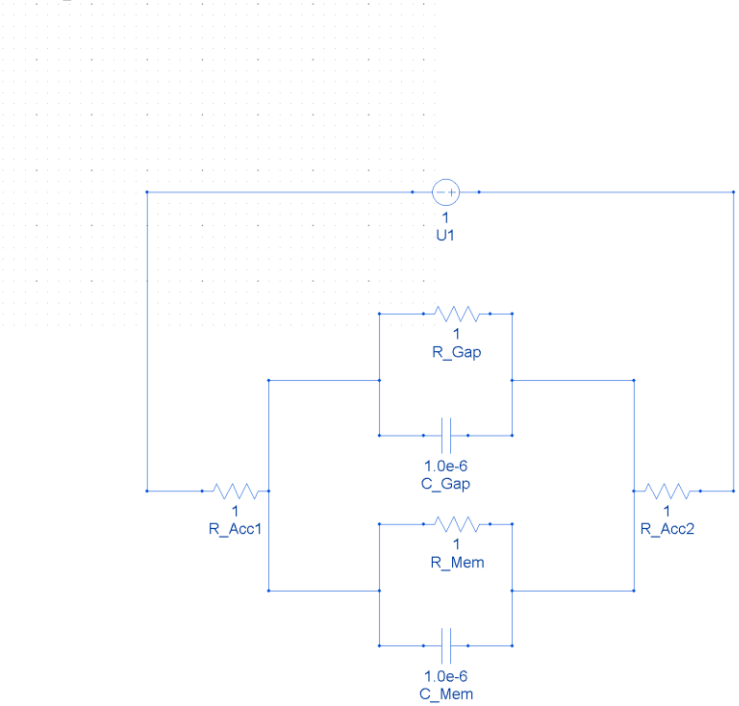
Table 1. Geometry model statistics

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

Number of nodes: 35.

Electric circuit

Coupled electric circuit



Circuit elements:

Capacitor C_Mem=0.000001 [F]
Resistor R_Mem=1 [Ohm]
Voltage source U1=1 [V] 0 [deg]
Capacitor C_Gap=0.000001 [F]
Resistor R_Gap=1 [Ohm]
Resistor R_Acc2=1 [Ohm]

Resistor R_Acc1=1 [Ohm]

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)

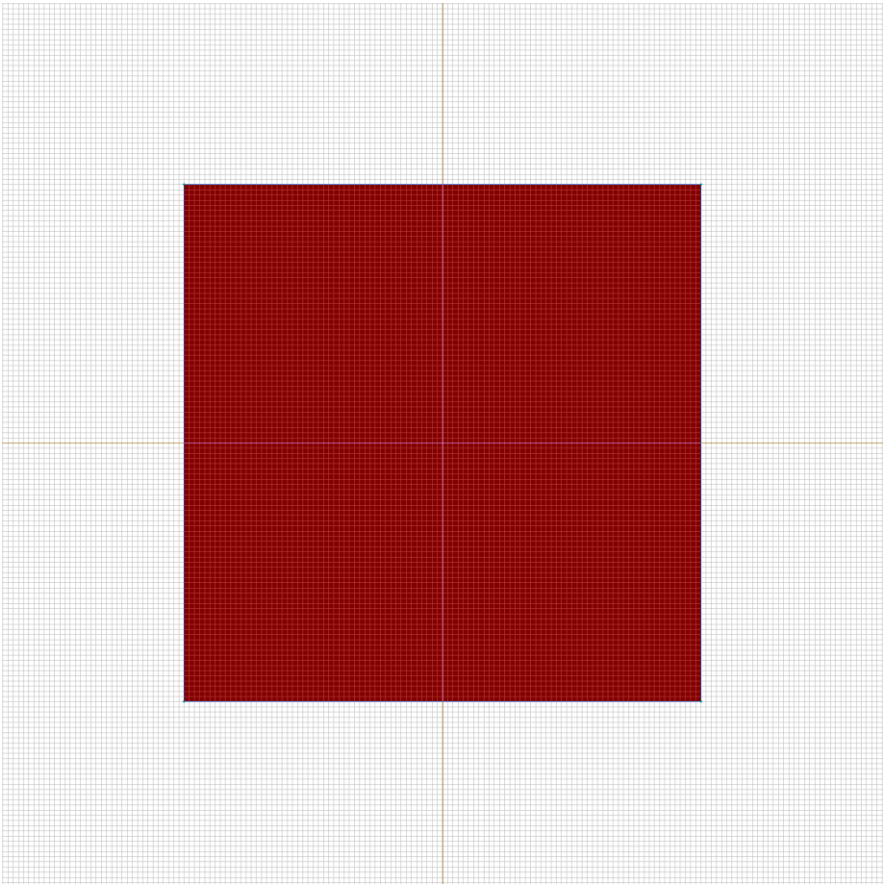
Blocks:	Edges:	Vertices:
• air •	• edge •	

Detailed information about each label is listed below.

Labelled objects: block "air"

There are (1) objects with this label

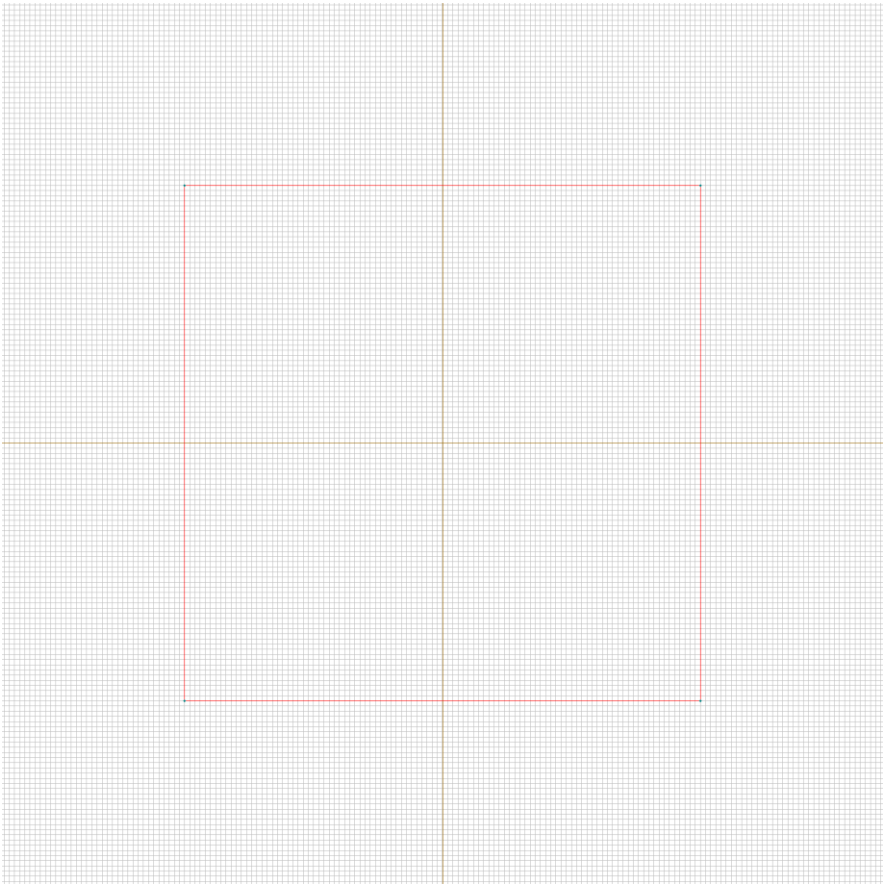
Relative magnetic permeability: mu_x=1, mu_y=1
Electric conductivity: sigma=0 [S/m]
Current density: j=0 [A/m2], phase 0 [deg]
Conductor's connection: in parallel



Labelled objects: edge "edge"

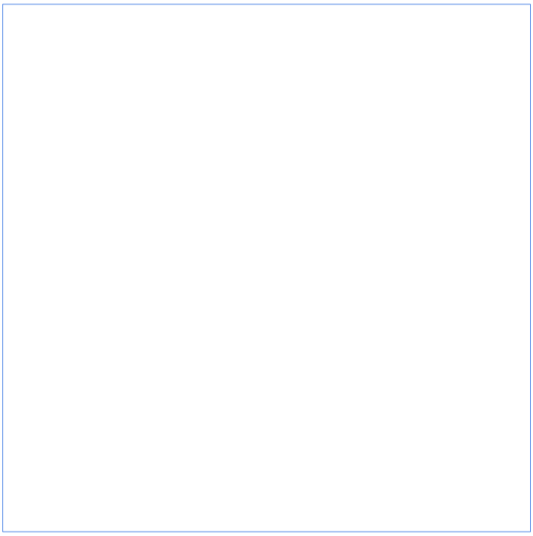
There are (4) objects with this label

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



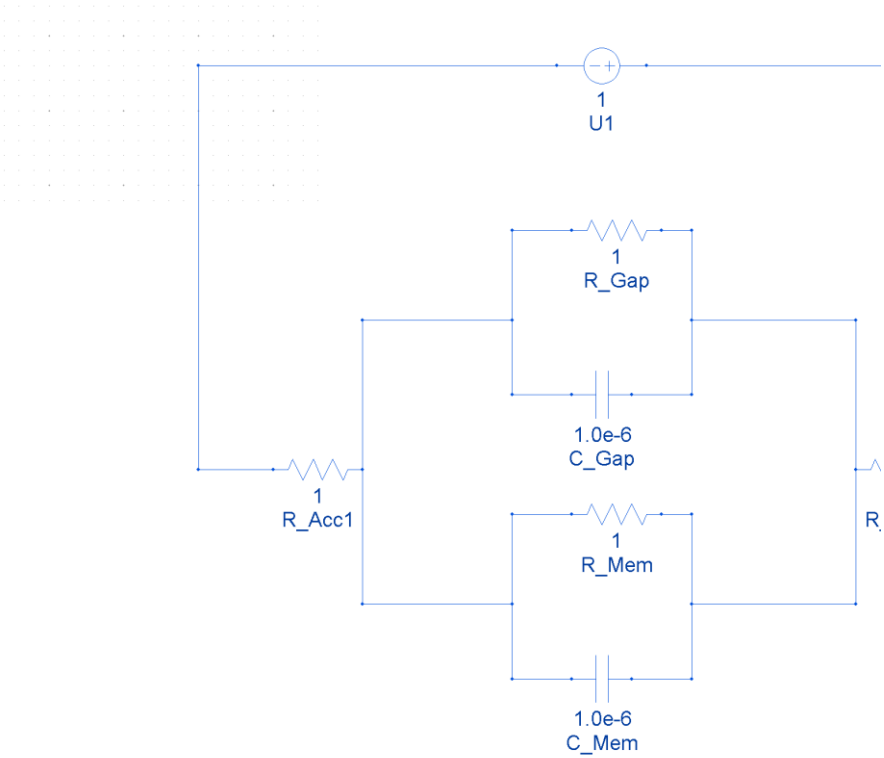
Results

Field lines



Results

Electric circuit currents



Circuit elements:

C_Mem. I=0.00006283 [A], phase=-90.01 [deg]

R_Mem. I=0.2 [A], phase=179.99 [deg]

U1. I=0.4 [A], phase=0.0036 [deg]

C_Gap. I=0.00006283 [A], phase=-90.01 [deg]

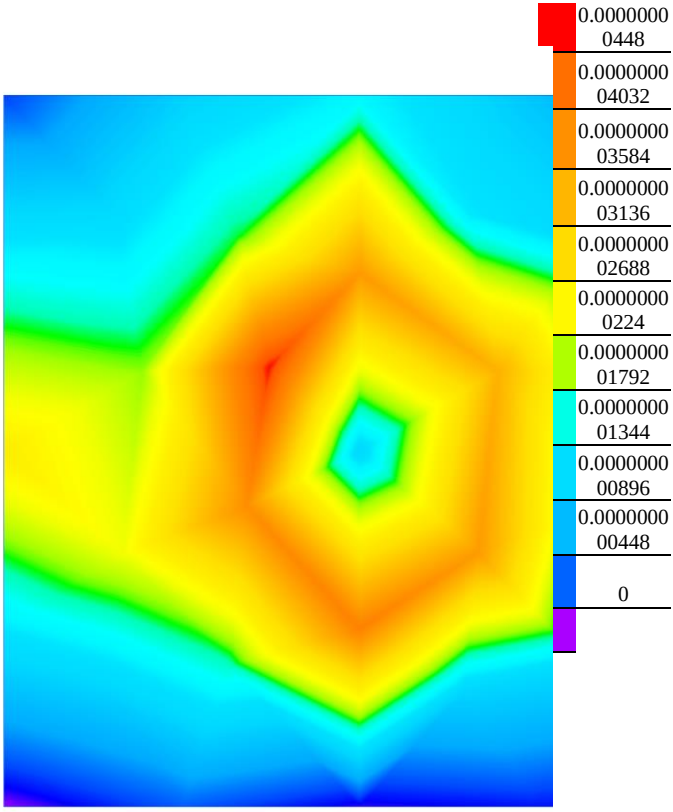
R_Gap. I=0.2 [A], phase=179.99 [deg]

R_Acc2. I=0.4 [A], phase=-180 [deg]

R_Acc1. I=0.4 [A], phase=-180 [deg]

Results

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



Nonlinear dependencies

No non-linear dependencies are used in this problem data