Problem info

Problem type: Magnetostatics
Geometry model class: Axisymmetric
Problem database file names:

- Problem: *Magn2.pbm*
- Geometry: *Magn2.mod*
- Material Data: *Magn2.dms*
- Material Data 2 (library): *none*
- Electric circuit: *none*

Results taken from other problems:

- *none*

Geometry model

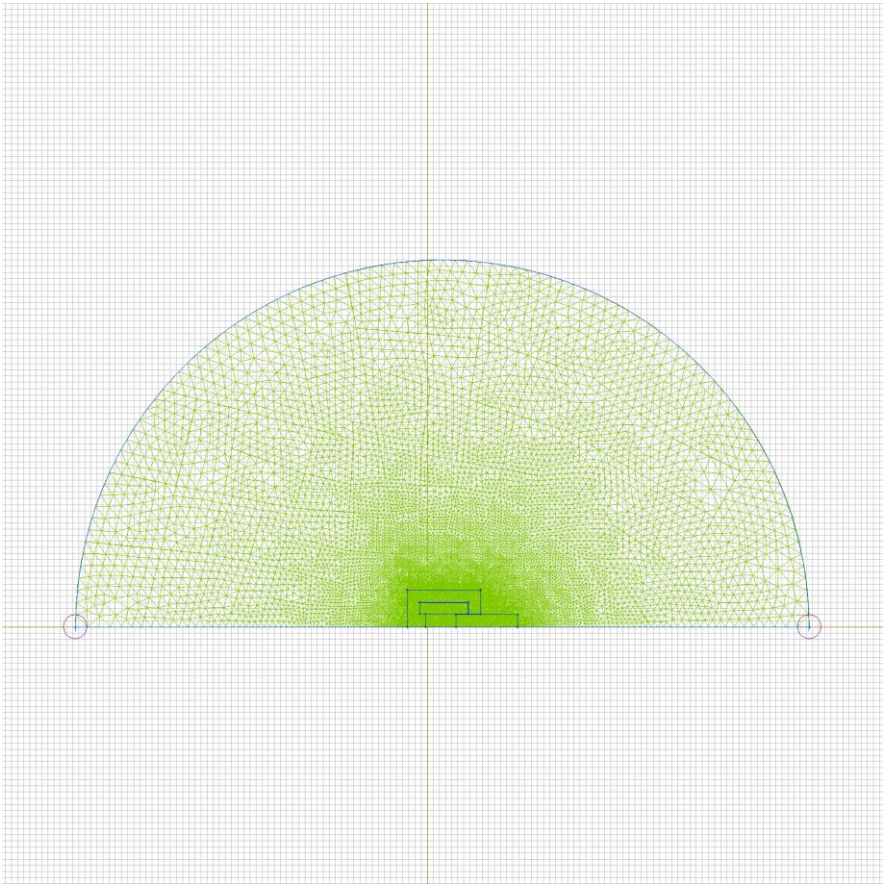


Table 1. Geometry model statistics

	With Label	Total
Blocks	5	5
Edges	2	23
Vertices	1	20

Number of nodes: 14324.

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)

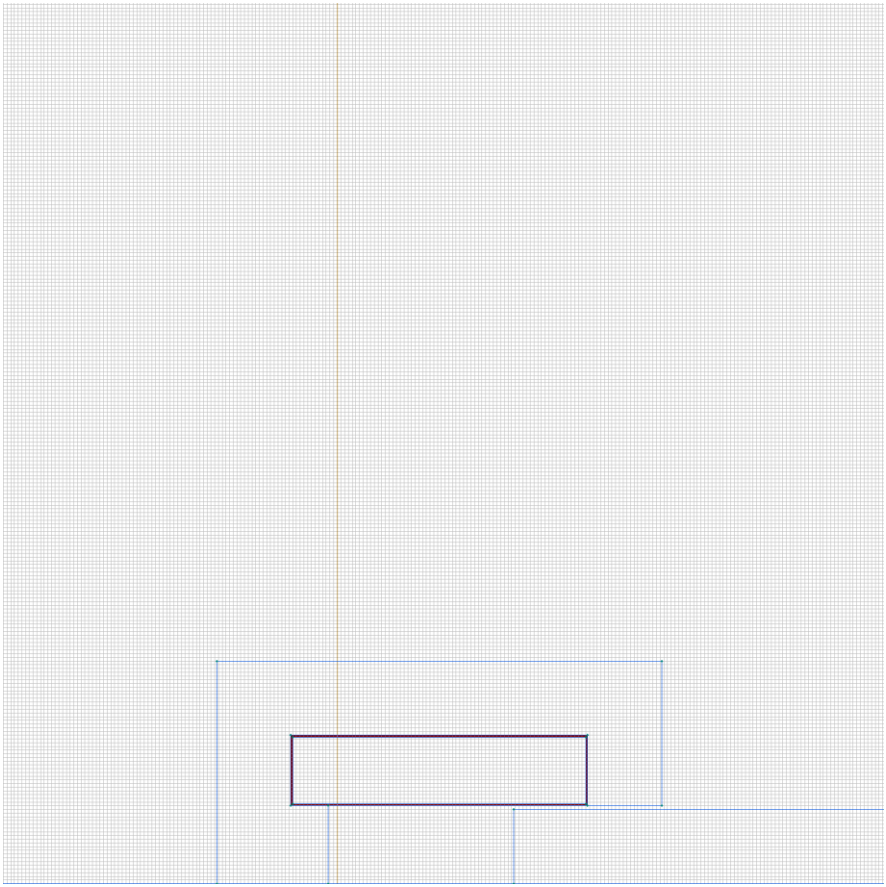
Blocks:	Edges:	Vertices:
• insulation • air • iron • coil • plunger •	• zero • core1 •	• p •

Detailed information about each label is listed below.

Labelled objects: block "insulation"

There are (1) objects with this label

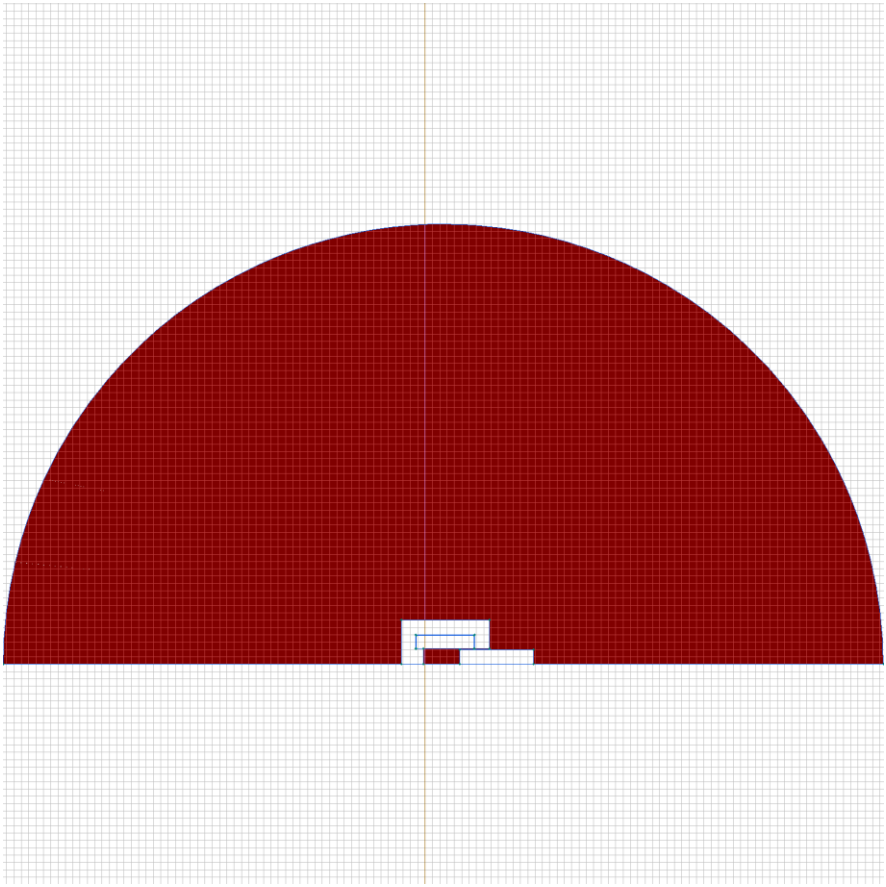
Relative magnetic permeability: mu_x=1, mu_y=1
Electric conductivity: sigma(T)=10000000 [S/m]
Voltage: U=0 [V]
Conductor's connection: in parallel



Labelled objects: block "air"

There are (1) objects with this label

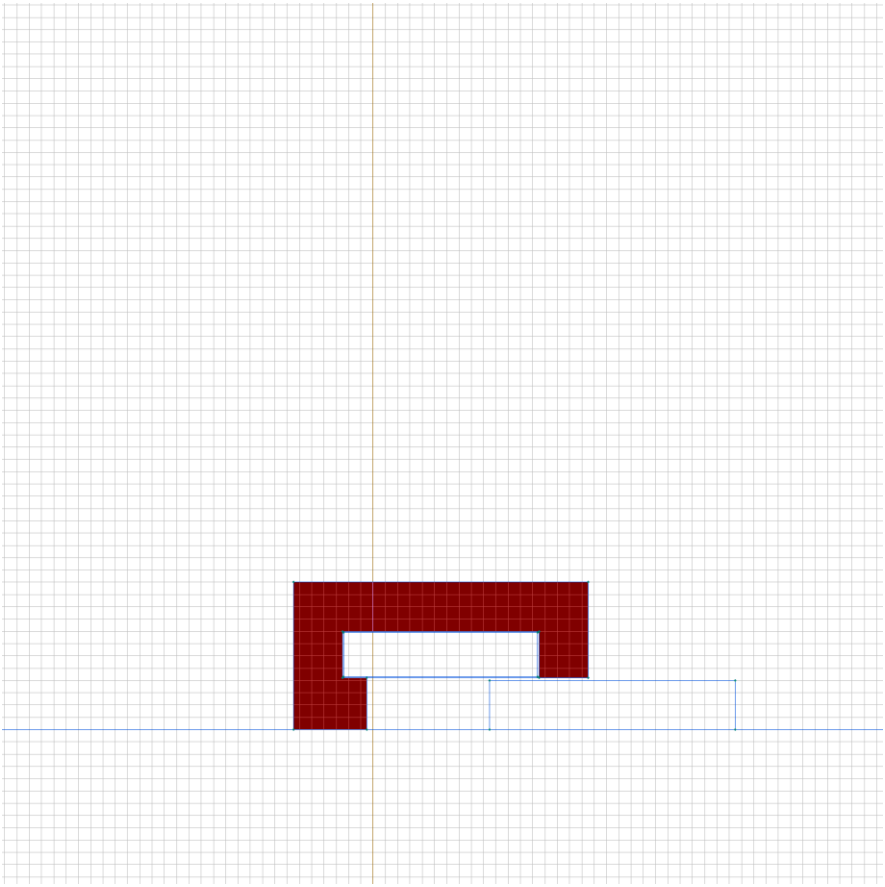
Relative magnetic permeability: mu_x=1, mu_y=1
Current density: j=0 [A/m2]
Conductor's connection: in parallel



Labelled objects: block "iron"

There are (1) objects with this label

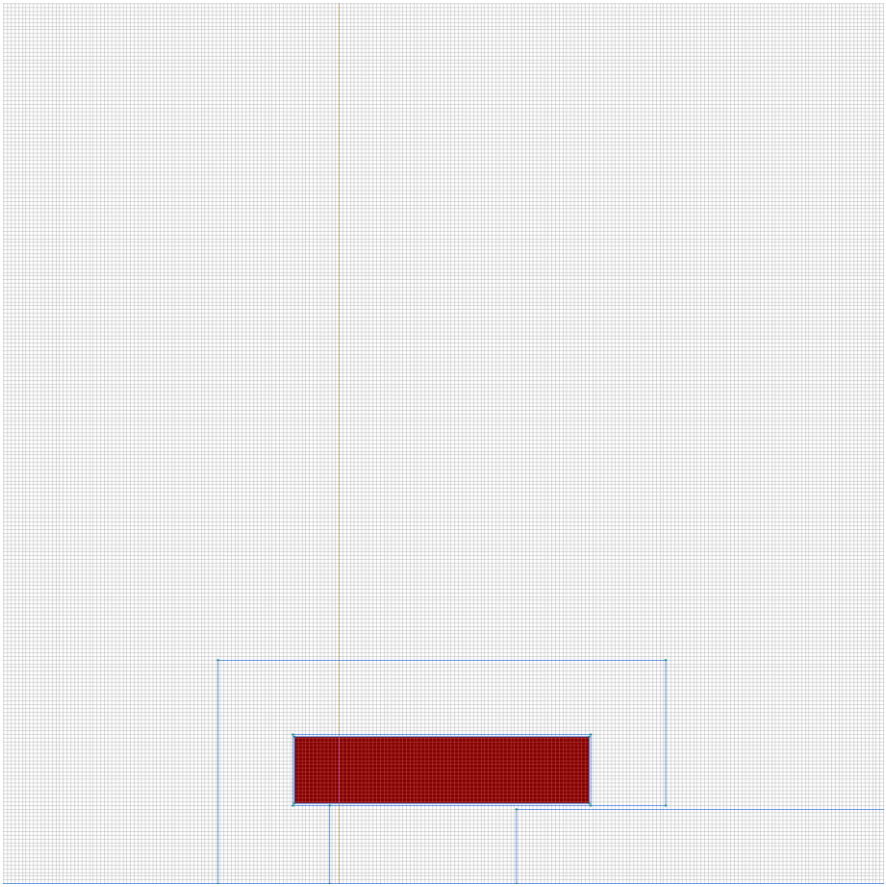
Relative magnetic permeability: mu=nonlinear (see Table 2 in the "Nonlinear dependencies" section)
Current density: j=0 [A/m2]
Conductor's connection: in parallel



Labelled objects: block "coil"

There are (1) objects with this label

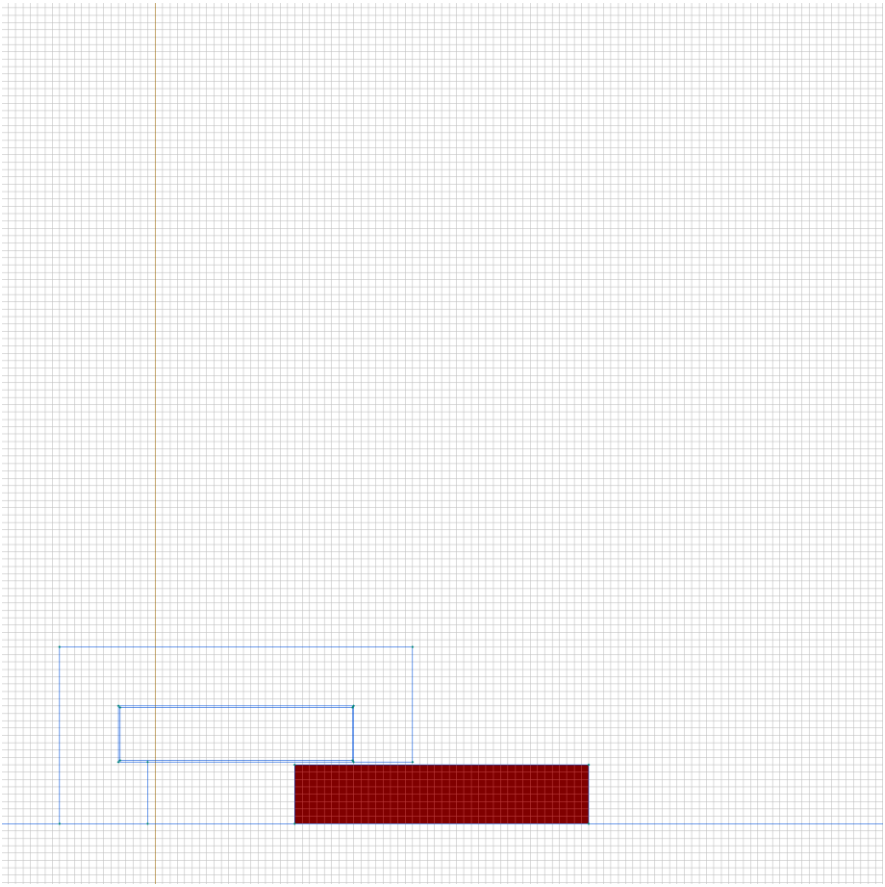
Relative magnetic permeability: mu_x=1, mu_y=1
Current density: j=4000000 [A/m2]
Conductor's connection: in parallel



Labelled objects: block "plunger"

There are (1) objects with this label

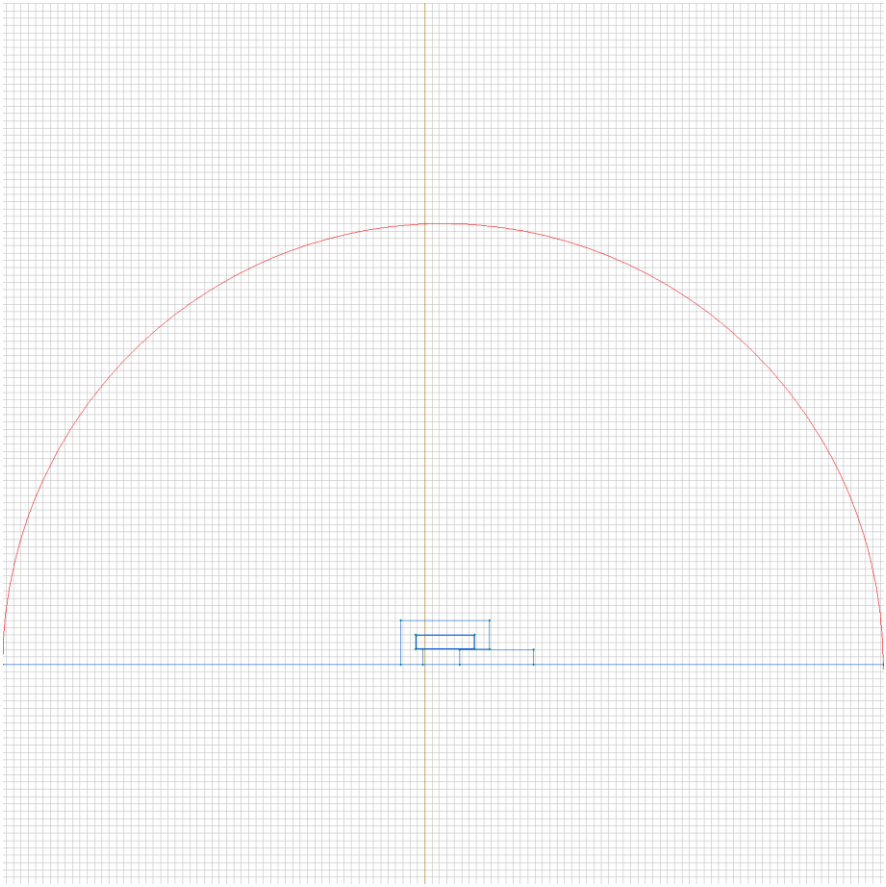
Relative magnetic permeability: mu=nonlinear (see Table 3 in the "Nonlinear dependencies" section)
Current density: j=0 [A/m2]
Conductor's connection: in parallel



Labelled objects: edge "zero"

There are (1) objects with this label

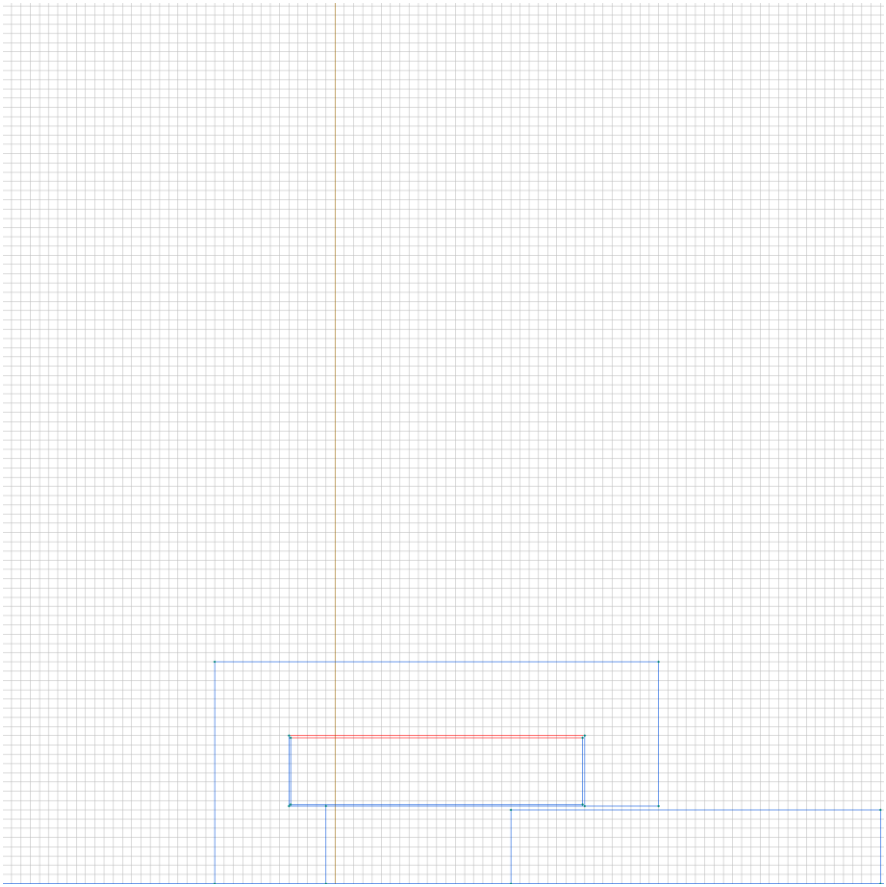
Magnetic potential: A=0 [Wb/m]



Labelled objects: edge "core1"

There are (2) objects with this label

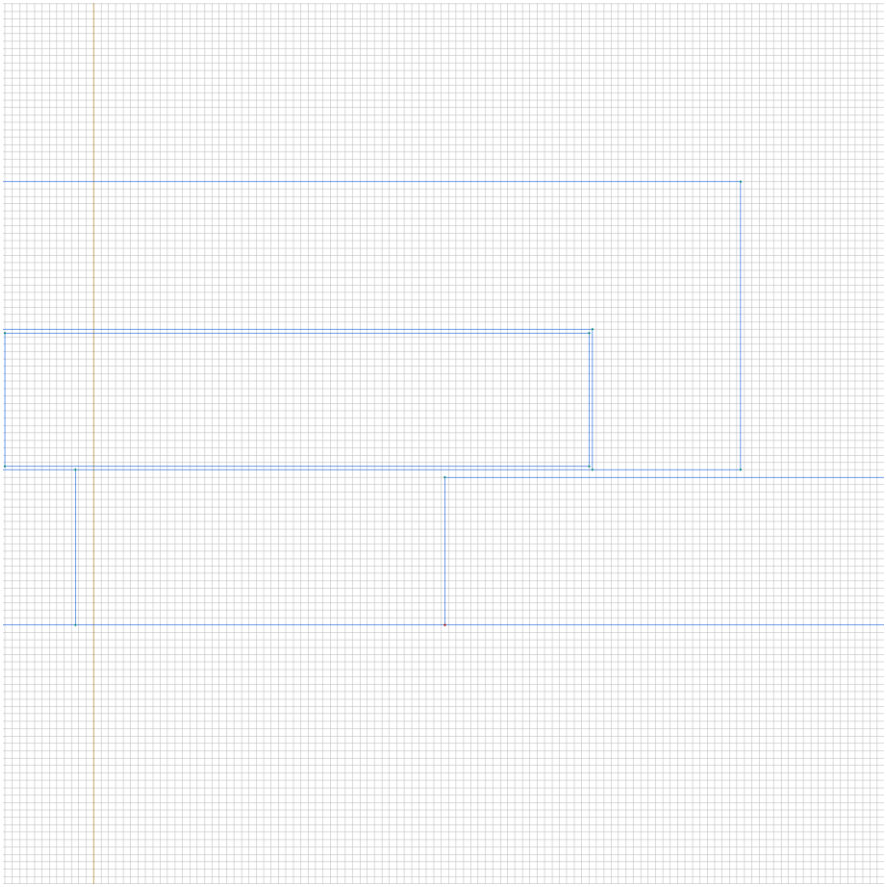
No material data (boundary conditions) are specified



Labelled objects: vertex "p"

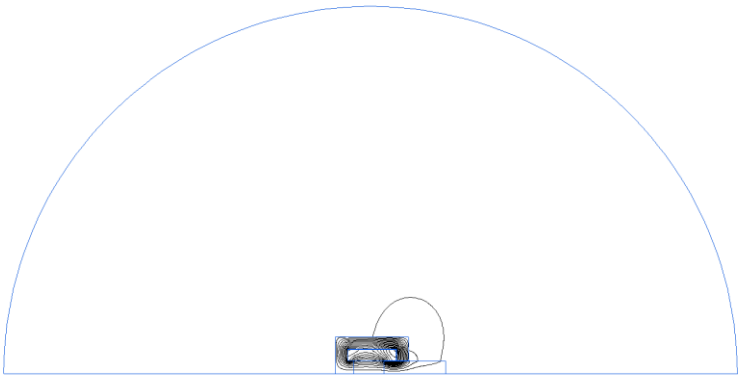
There are (1) objects with this label

No material data (boundary conditions) are specified



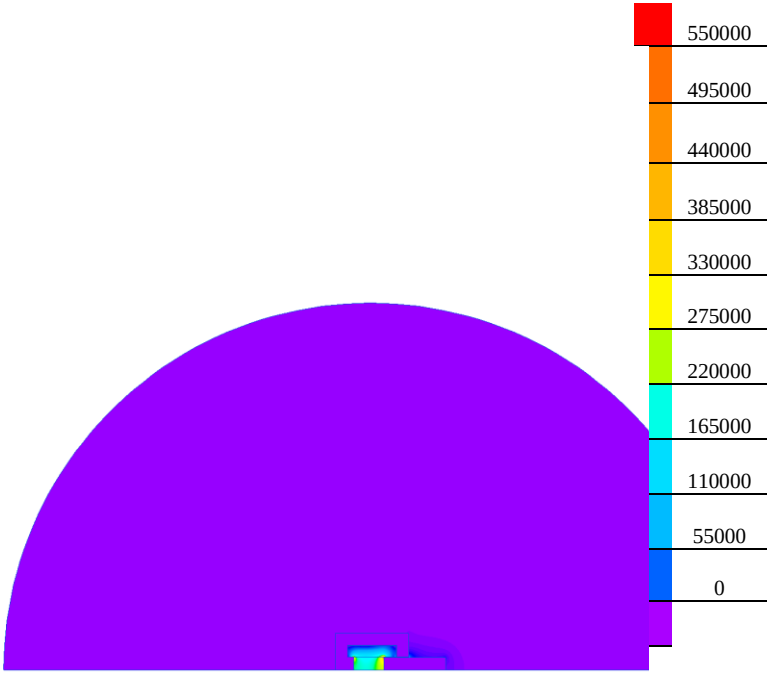
Results

Field lines



Results

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



Nonlinear dependencies

Table 2. BH-curve

B [T]	H [A/m]
0	0
0.5	500
1	1300
1.1	2000
1.3	10000
1.5	50000
1.6	100000
2	390000
2.2	545000

Table 3. BH-curve

B [T]	H [A/m]
0	0
0.5	500
1	1300
1.1	2000
1.3	10000
1.5	50000
1.6	100000
2	390000
2.2	545000