

Problem info

Problem type: Magnetostatics

Geometry model class: Axisymmetric

Problem database file names:

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

Results taken from other problems:

- *none*

Geometry model

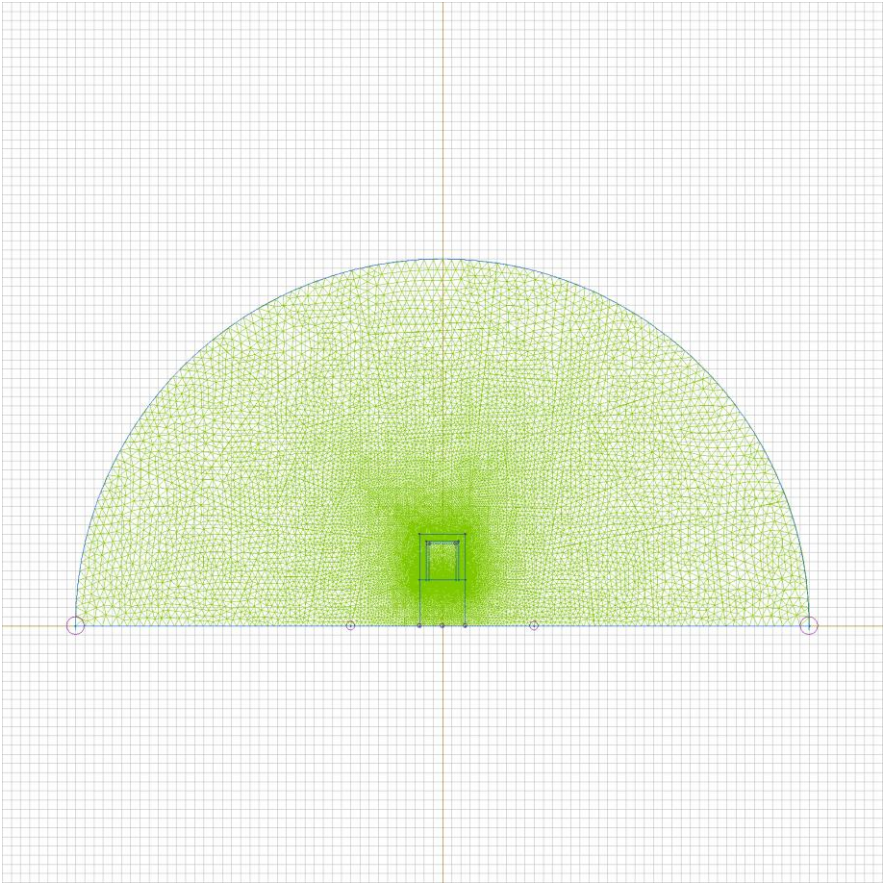


Table 1. Geometry model statistics

| | With Label | Total |
|----------|------------|-------|
| Blocks | 4 | 5 |
| Edges | 1 | 23 |
| Vertices | 0 | 19 |

Number of nodes: 18807.

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:

- [insulation](#)
- [vacuum](#)
- [core](#)
- [winding](#)
-

Edges:

- [boundary](#)
-

Vertices:

Detailed information about each label is listed below.

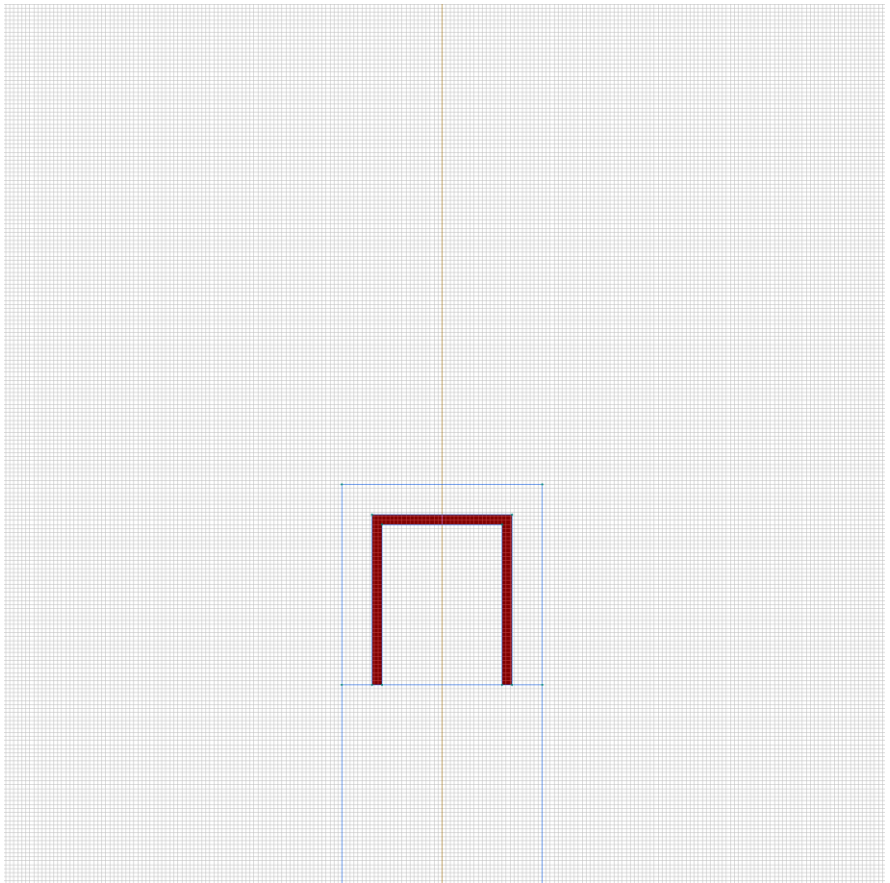
Labelled objects: block "insulation"

There are (1) objects with this label

Relative magnetic permeability: $\mu_x=1$, $\mu_y=1$

Current density: $j=0$ [A/m²]

Conductor's connection: in parallel



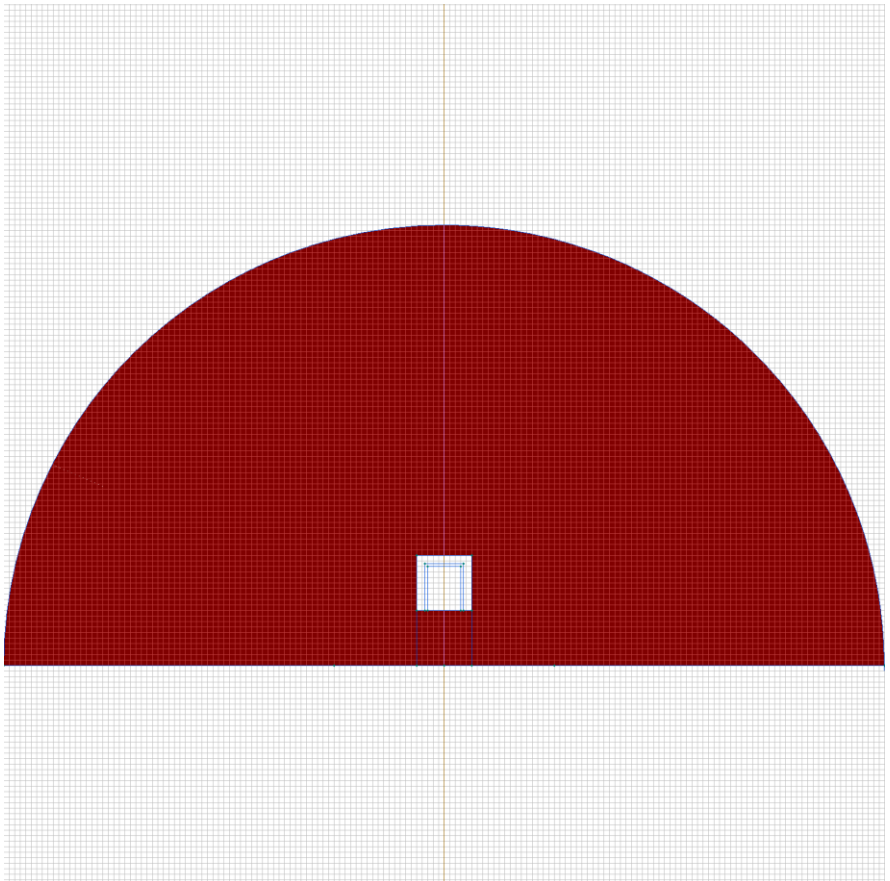
Labelled objects: block "vacuum"

There are (2) objects with this label

Relative magnetic permeability: $\mu_x=1$, $\mu_y=1$

Current density: $j=0$ [A/m²]

Conductor's connection: in parallel



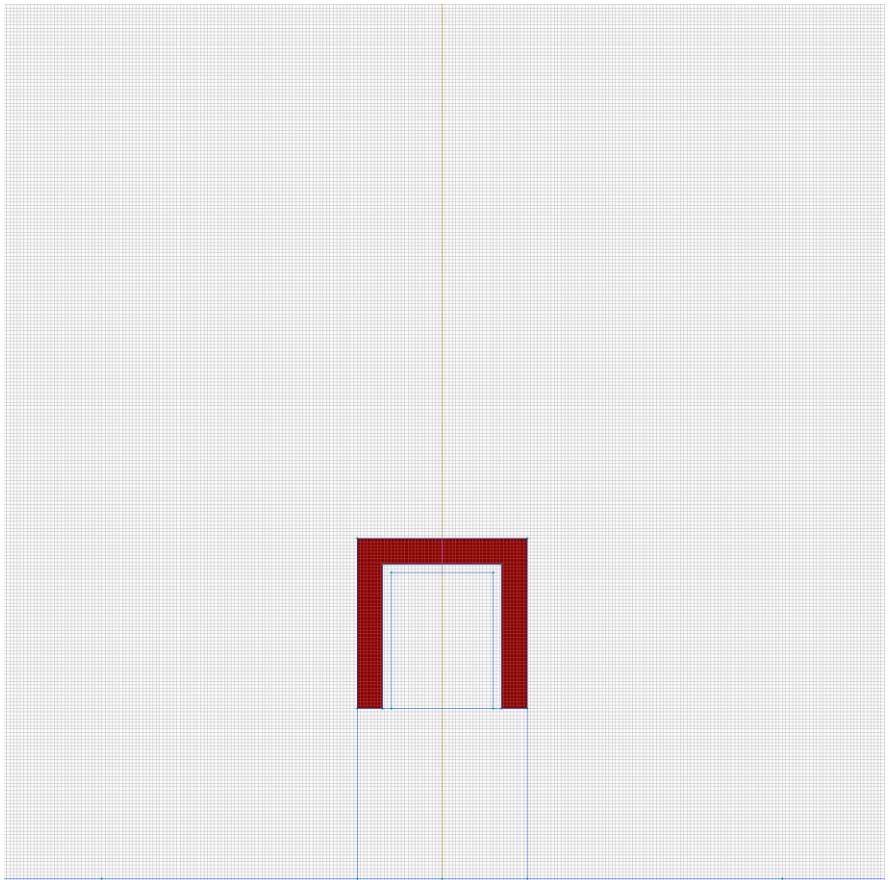
Labelled objects: block "core"

There are (1) objects with this label

Relative magnetic permeability: $\mu_x=1000$, $\mu_y=1000$

Current density: $j=0$ [A/m²]

Conductor's connection: in parallel



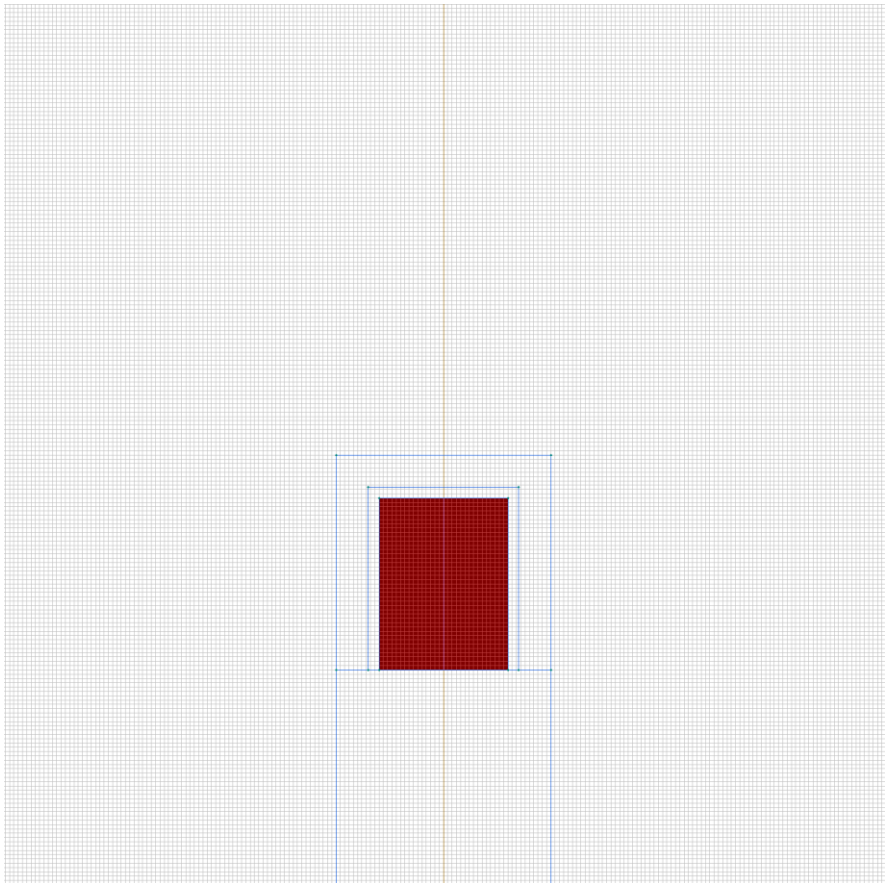
Labelled objects: block "winding"

There are (1) objects with this label

Relative magnetic permeability: $\mu_x=1$, $\mu_y=1$

Total current: $I=10$ [A]

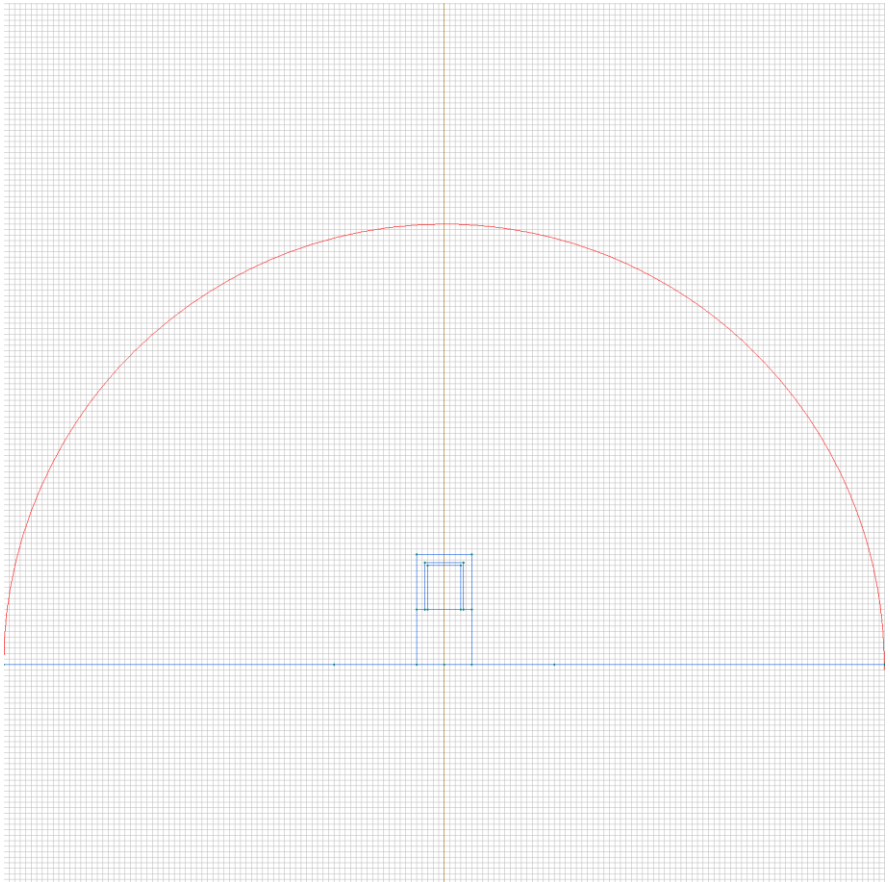
Conductor's connection: in parallel



Labelled objects: edge "boundary"

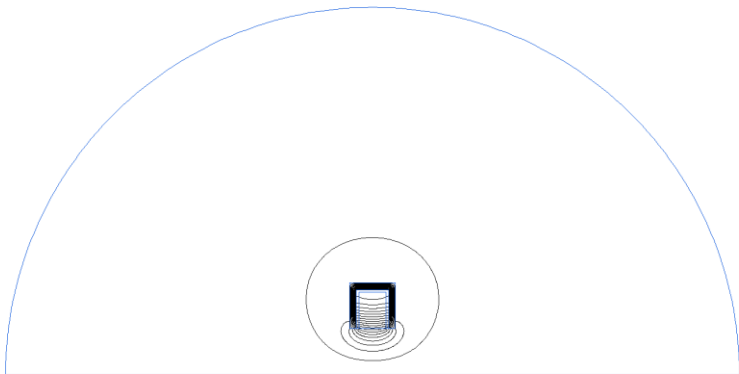
There are (1) objects with this label

Magnetic potential: $A=0$ [Wb/m]



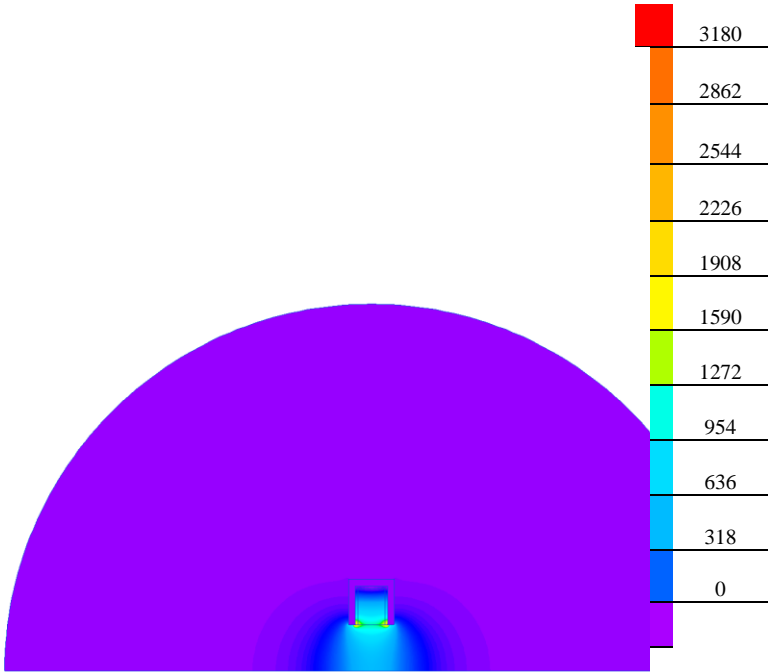
Results

Field lines



Results

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



Nonlinear dependencies

No non-linear dependencies are used in this problem data