

# Problem info

Problem type: Magnetostatics

Geometry model class: Axisymmetric

Problem database file names:

- Problem: *coil\_problem.pbm*
- Geometry: *Coil\_model.mod*
- Material Data: *Coil\_data.dms*
- Material Data 2 (library): *none*
- Electric circuit: *none*

Results taken from other problems:

- *none*

# Geometry model

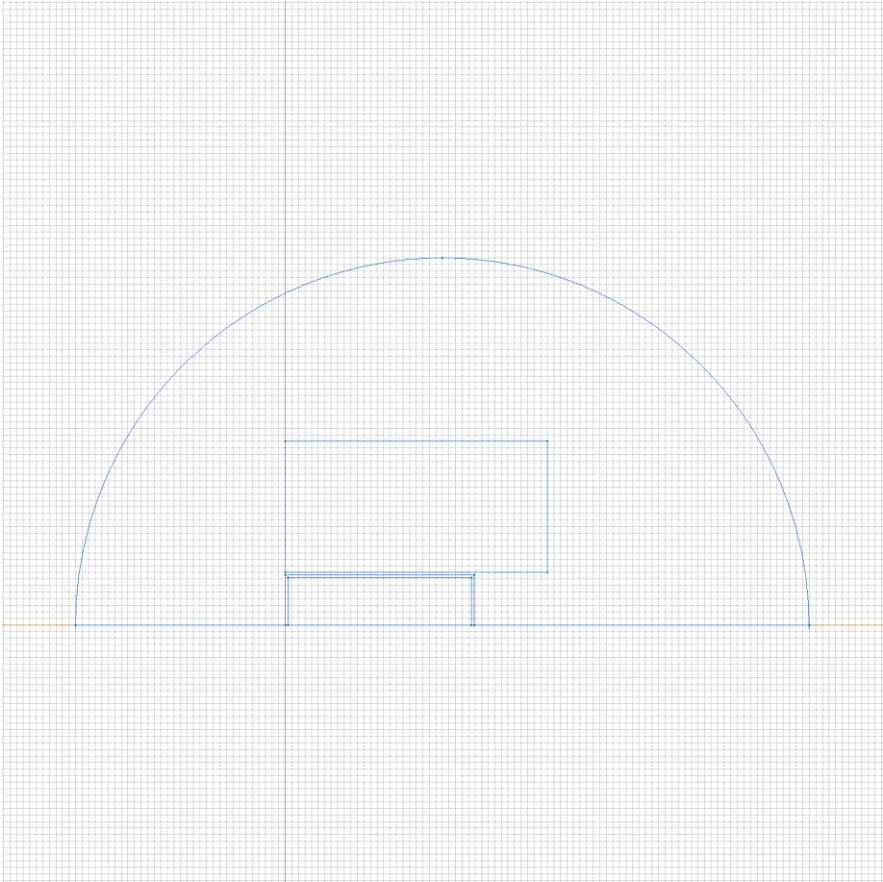


Table 1. Geometry model statistics

	With Label	Total
Blocks	4	4
Edges	1	17
Vertices	1	15

Number of nodes: 234.

# 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](#)
- [winding](#)
- [plunger\\_core](#)
- [air](#)
- 

Edges:

- [a0](#)
- 

Vertices:

- [position](#)
- 

Detailed information about each label is listed below.

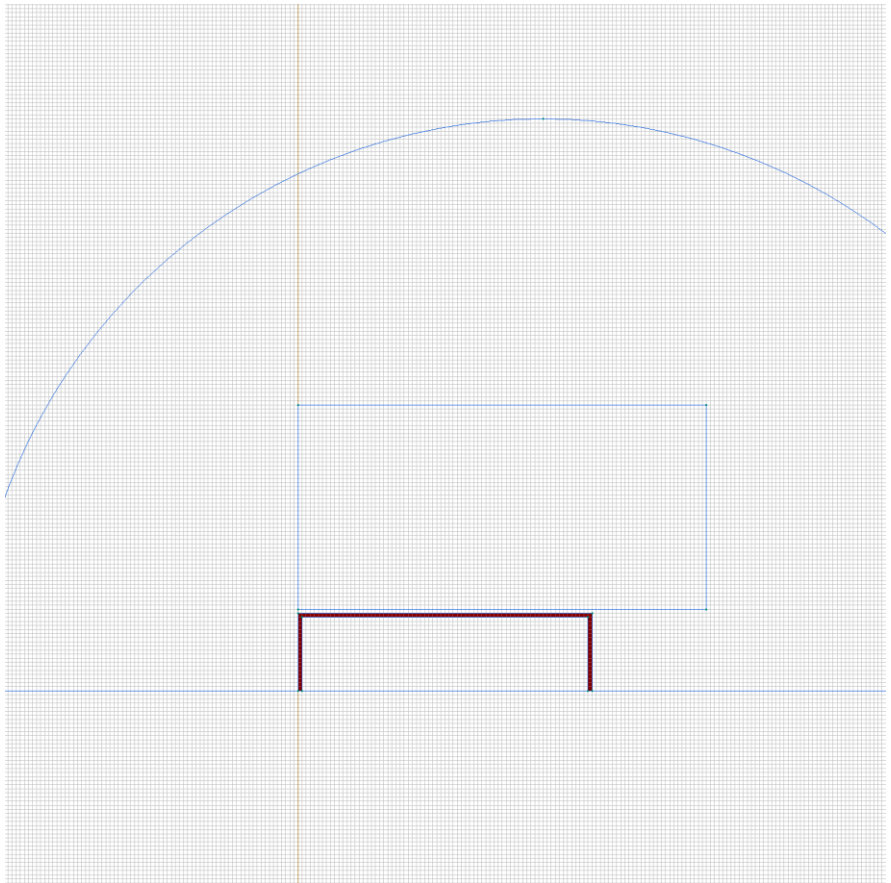
## Labelled objects: block "insulation"

There are (1) objects with this label

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

Current density:  $j=0$  [A/m<sup>2</sup>]

Conductor's connection: in parallel



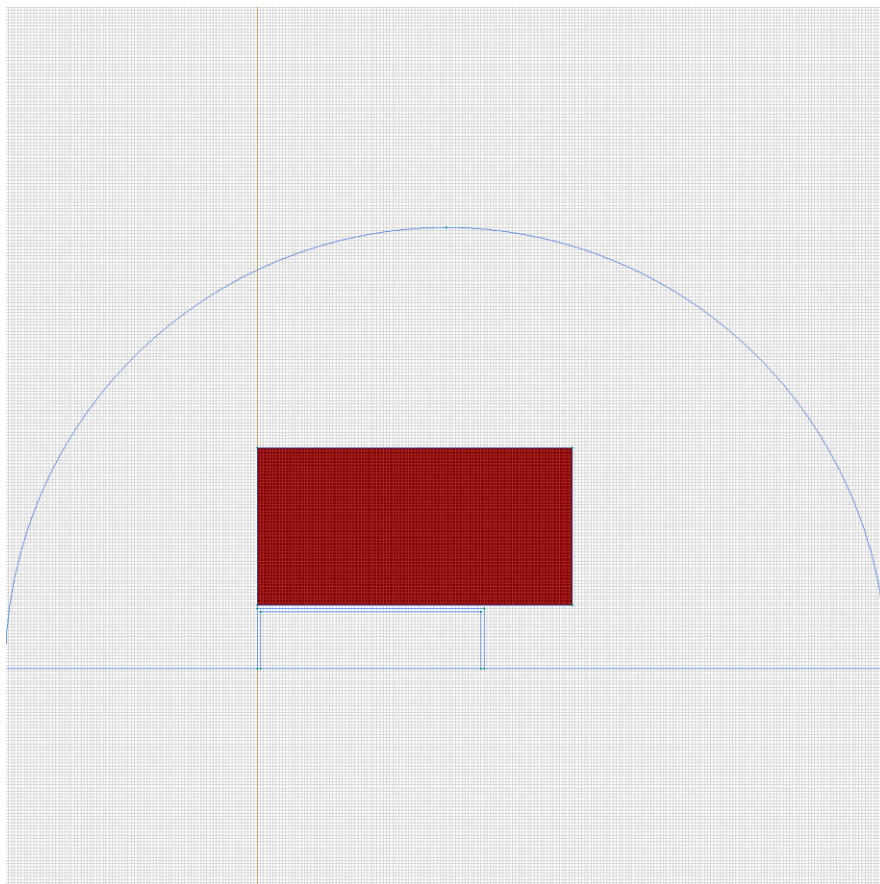
Labelled objects: block "winding"

There are (1) objects with this label

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

Total current:  $I=2000*0.2$  [A]

Conductor's connection: in parallel



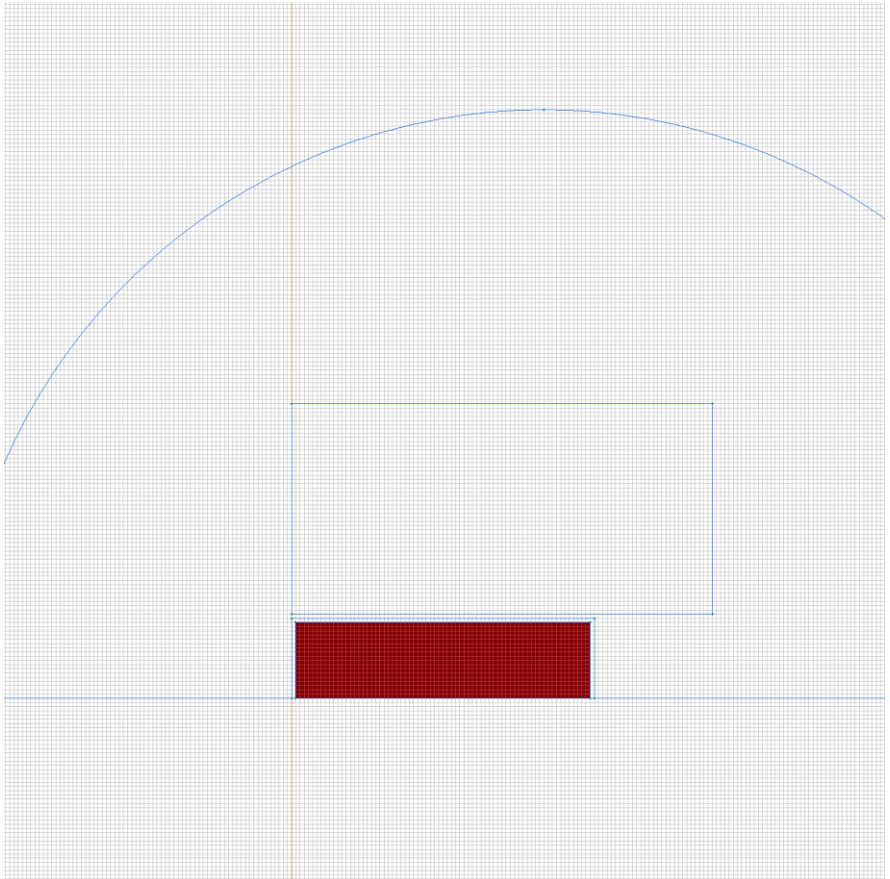
Labelled objects: block "plunger\_core"

There are (1) objects with this label

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

Current density:  $j=0$  [A/m<sup>2</sup>]

Conductor's connection: in parallel



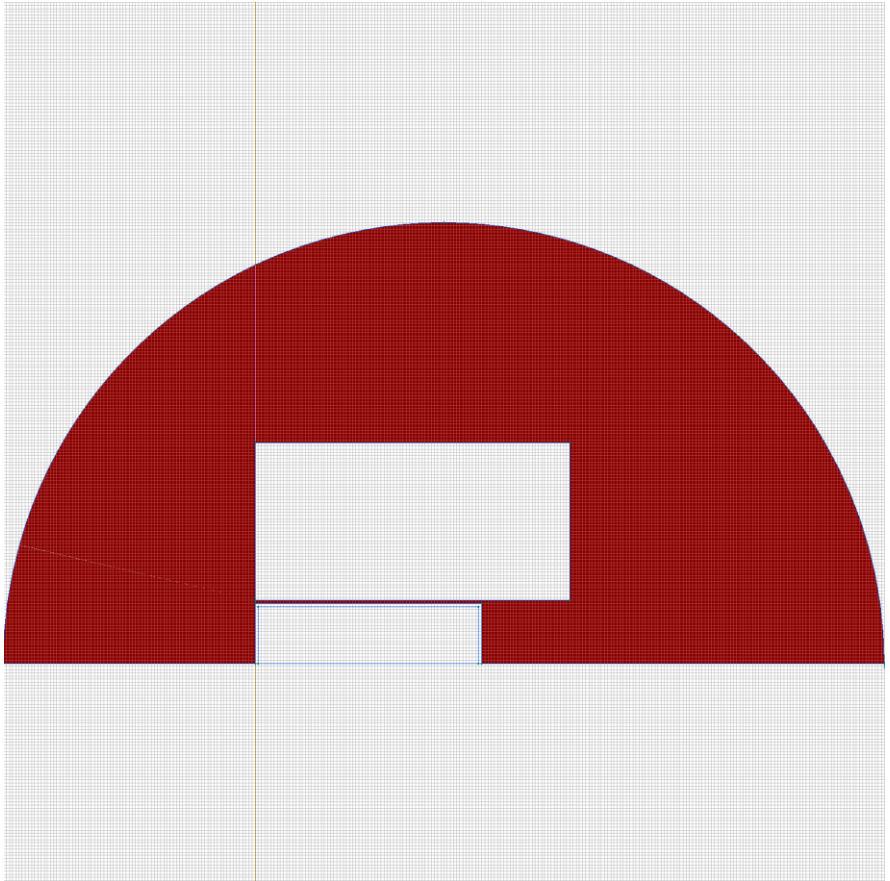
Labelled objects: block "air"

There are (1) objects with this label

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

Current density:  $j=0$  [A/m<sup>2</sup>]

Conductor's connection: in parallel

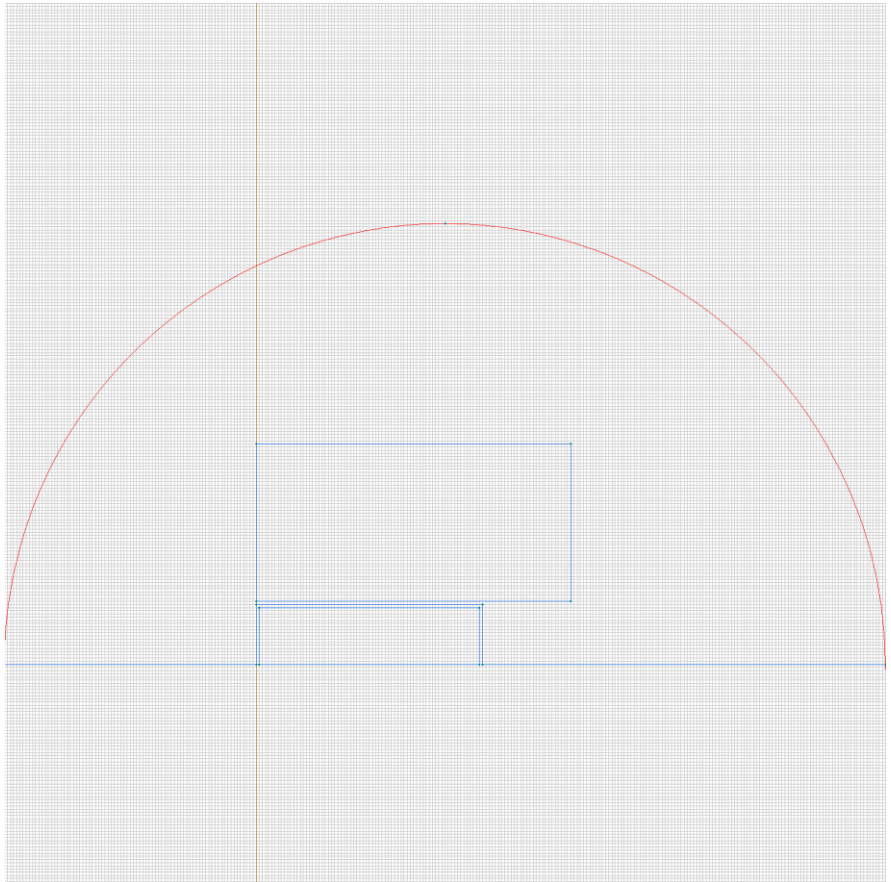




Labelled objects: edge "a0"

There are (2) objects with this label

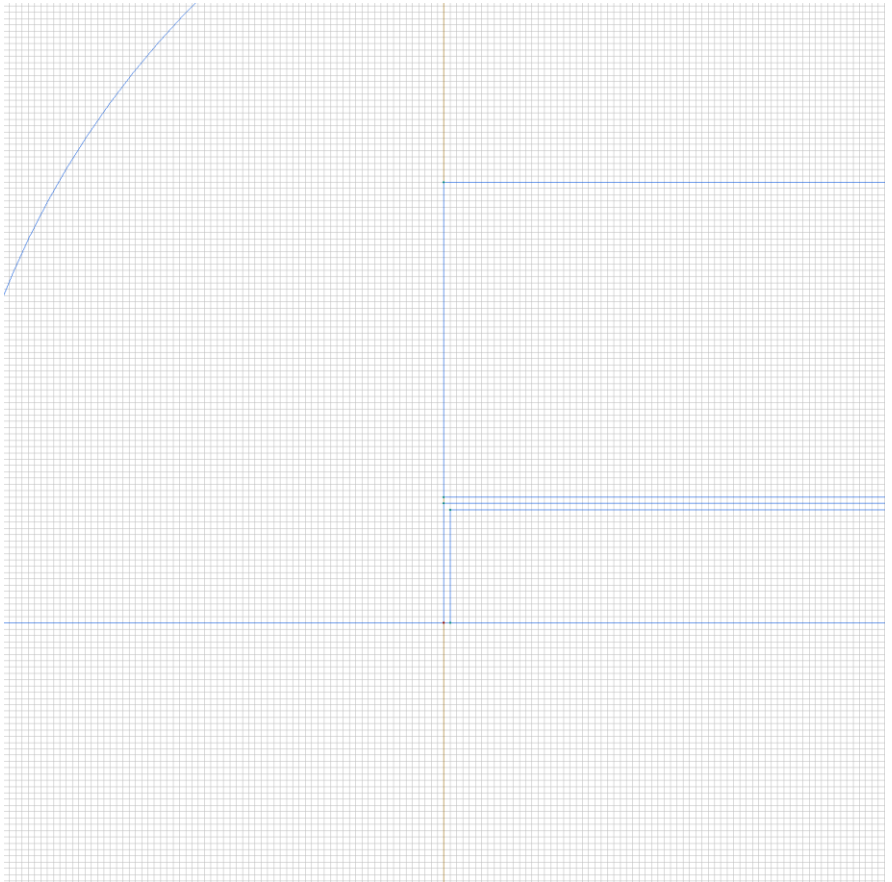
Magnetic potential:  $A=0$  [Wb/m]



## Labelled objects: vertex "position"

There are (1) objects with this label

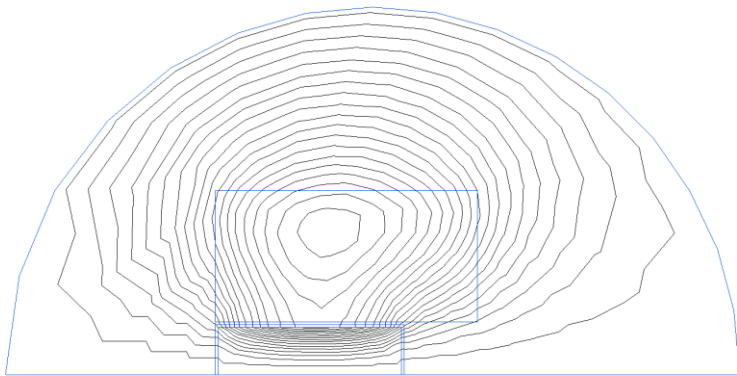
No material data (boundary conditions) are specified





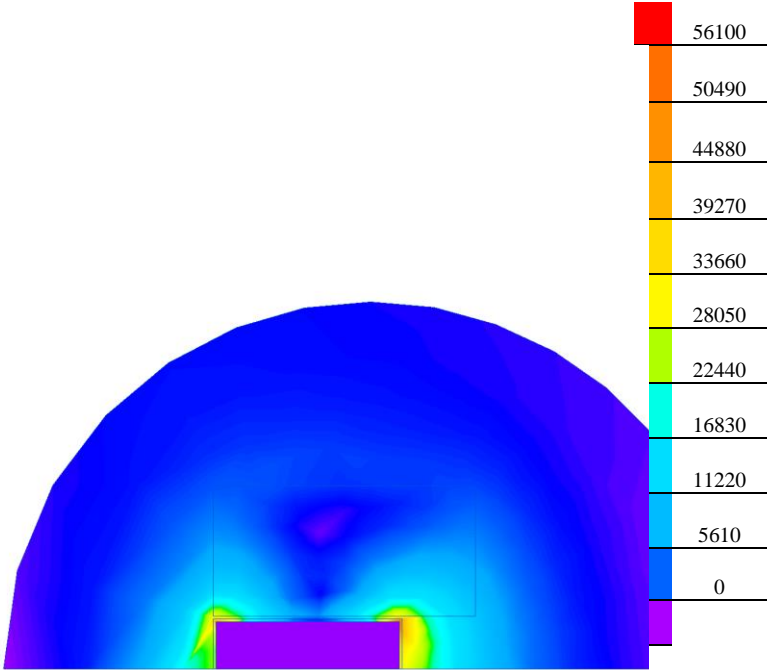
# Results

Field lines



# Results

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



# Nonlinear dependencies

No non-linear dependencies are used in this problem data