# Problem info

Problem type: Transient Magnetics (integration time: 2.49999994412065E-03 s.)
Geometry model class: Plane-Parallel
Problem database file names:

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

Results taken from other problems:

- *none*

# Geometry model

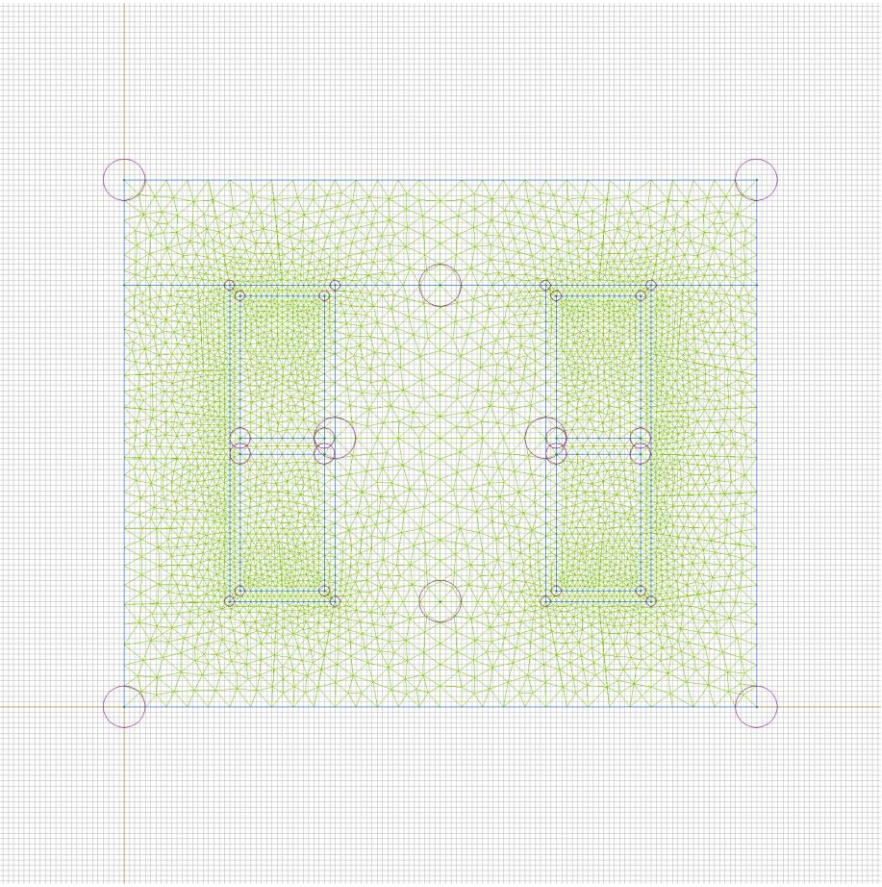


Table 1. Geometry model statistics

| | With Label | Total |
|---|---|---|
| Blocks | 6 | 10 |
| Edges | 1 | 40 |
| Vertices | 0 | 34 |

Number of nodes: 3850.

# 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)

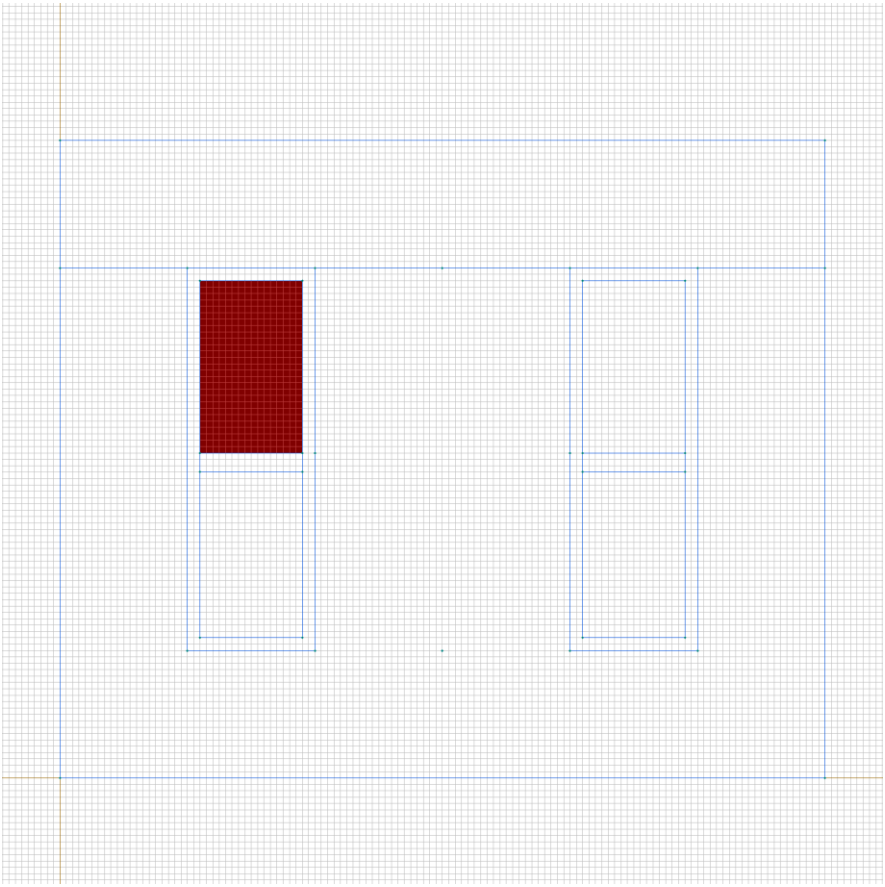
| Blocks: | Edges: | Vertices: |
|---|---|---|
| • V1+<br>• core<br>• insulation<br>• V1-<br>• v2-<br>• v2+<br>• | • boundary<br>• | |

Detailed information about each label is listed below.

# Labelled objects: block "V1+"

There are (1) objects with this label

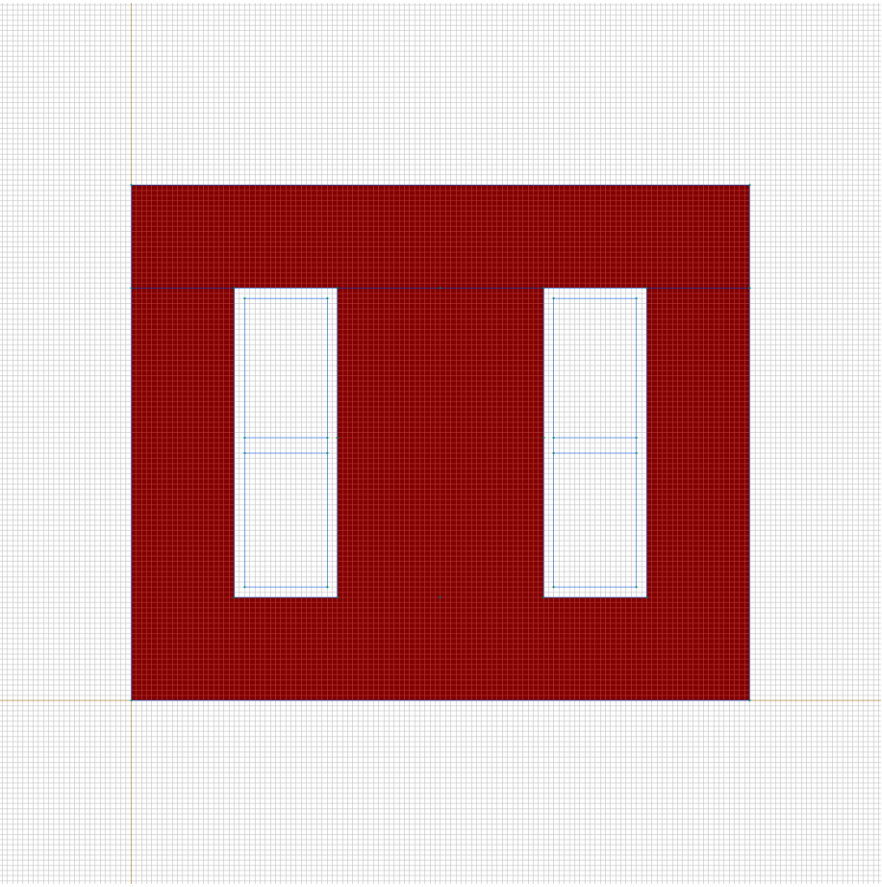
Relative magnetic permeability: mu_x=1, mu_y=1
Total current: I=400*20e-3 * sin(2*180*400*t) [A]
Conductor's connection: in parallel



# Labelled objects: block "core"

There are (2) objects with this label

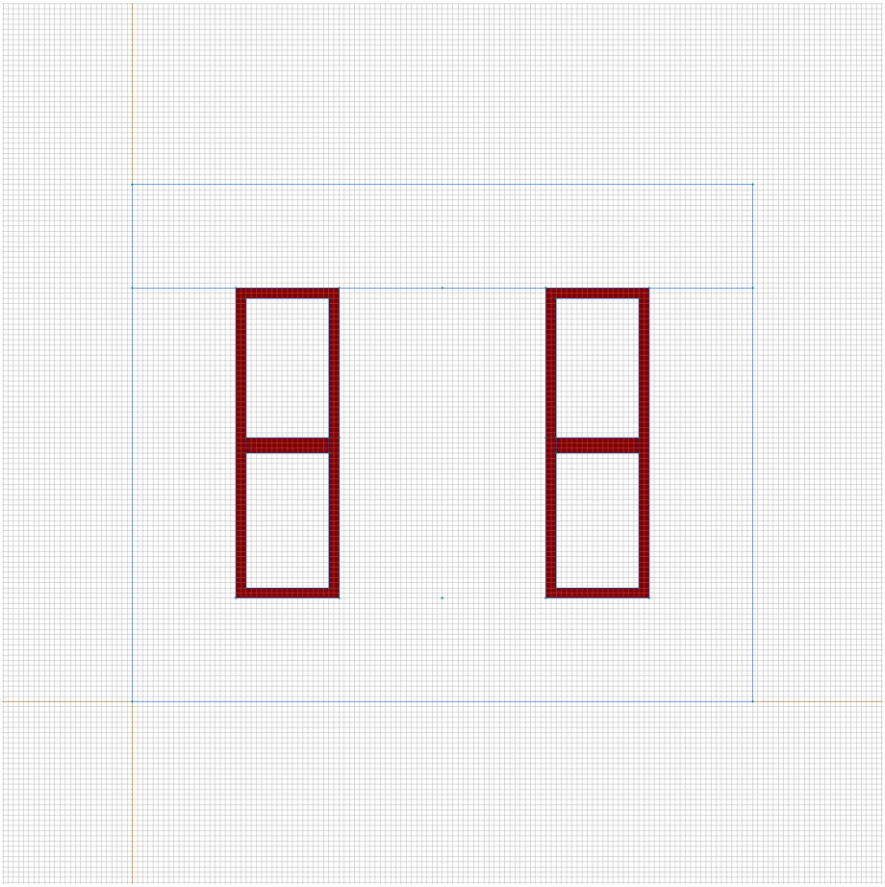
Relative magnetic permeability: mu_x=2000, mu_y=2000
Current density: j=0 [A/m2]
Conductor's connection: in parallel



# Labelled objects: block "insulation"

There are (4) objects with this label

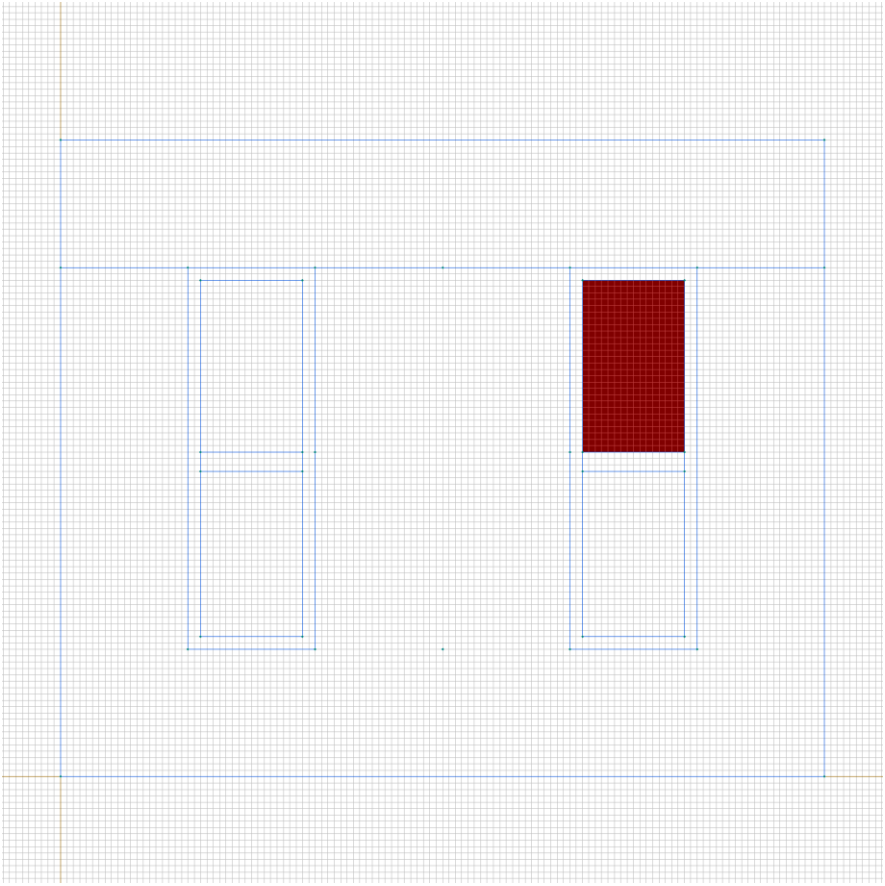
Relative magnetic permeability: mu_x=1, mu_y=1
Current density: j=0 [A/m2]
Conductor's connection: in parallel



# Labelled objects: block "V1-"

There are (1) objects with this label

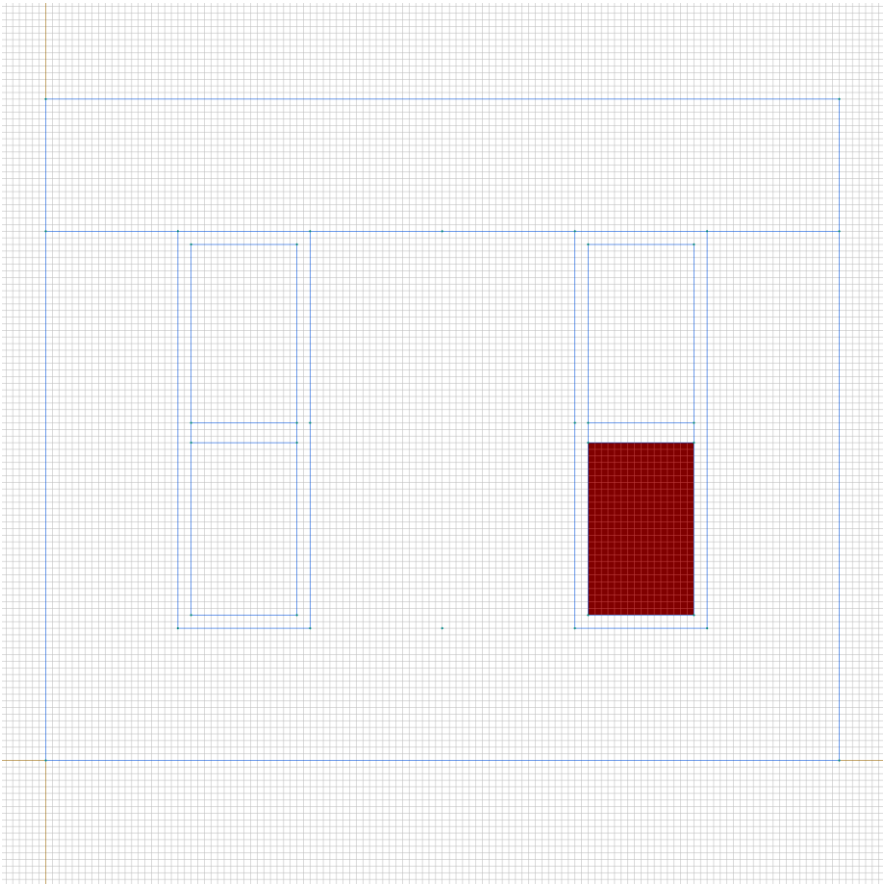
Relative magnetic permeability: mu_x=1, mu_y=1
Total current: I=- 400*20e-3 * sin(2*180*400*t) [A]
Conductor's connection: in parallel



# Labelled objects: block "v2-"

There are (1) objects with this label

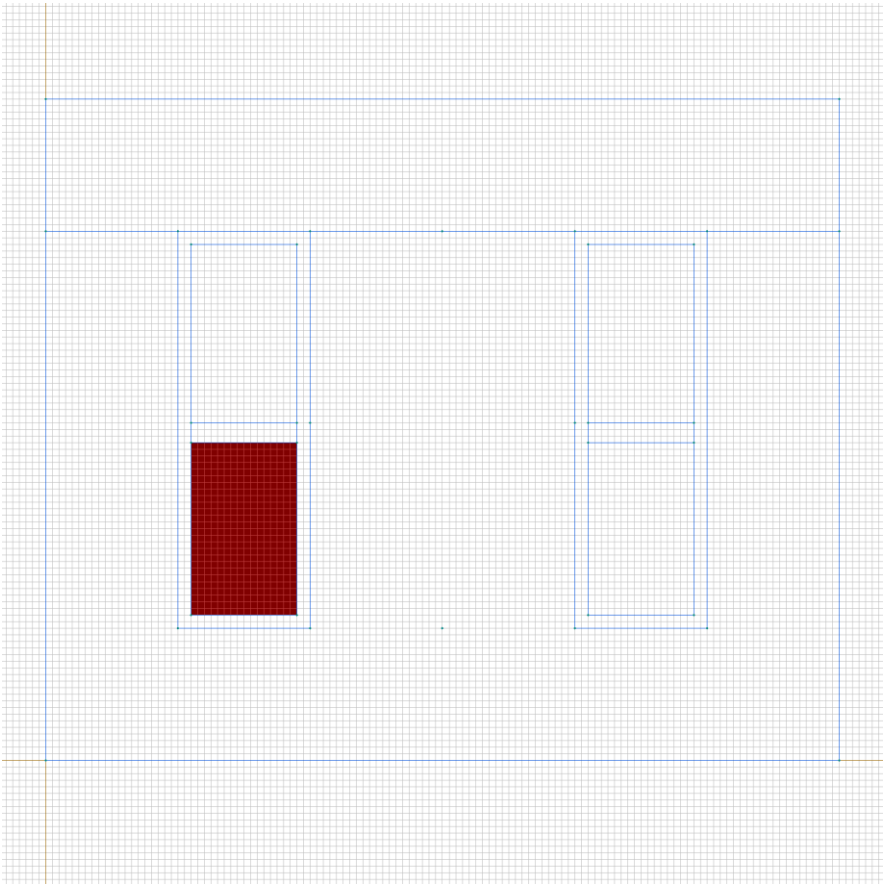
Relative magnetic permeability: mu_x=1, mu_y=1
Current density: j=0 [A/m2]
Conductor's connection: in parallel



# Labelled objects: block "v2+"

There are (1) objects with this label

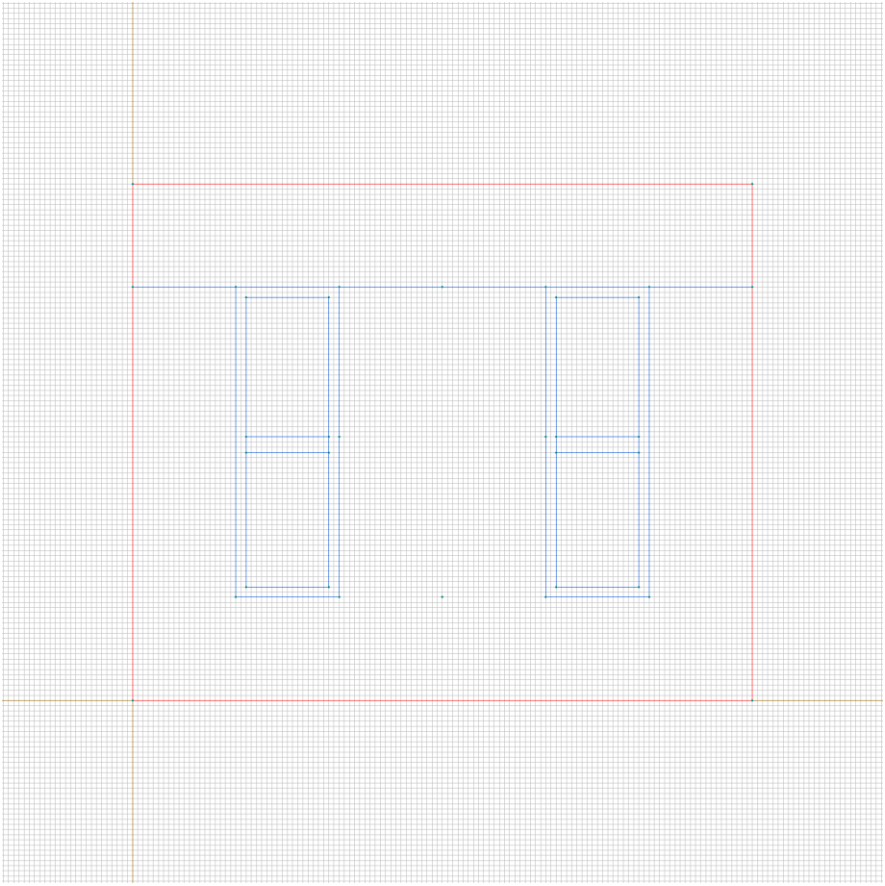
Relative magnetic permeability: mu_x=1, mu_y=1
Current density: j=0 [A/m2]
Conductor's connection: in parallel



# Labelled objects: edge "boundary"

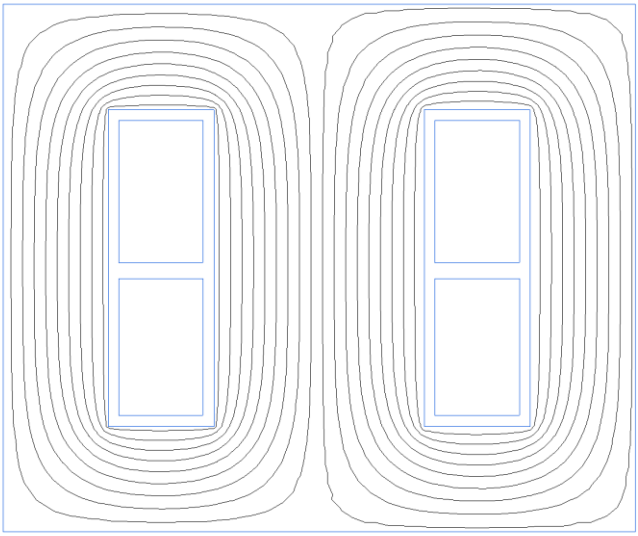
There are (6) objects with this label

Magnetic potential: A=0 [Wb/m]



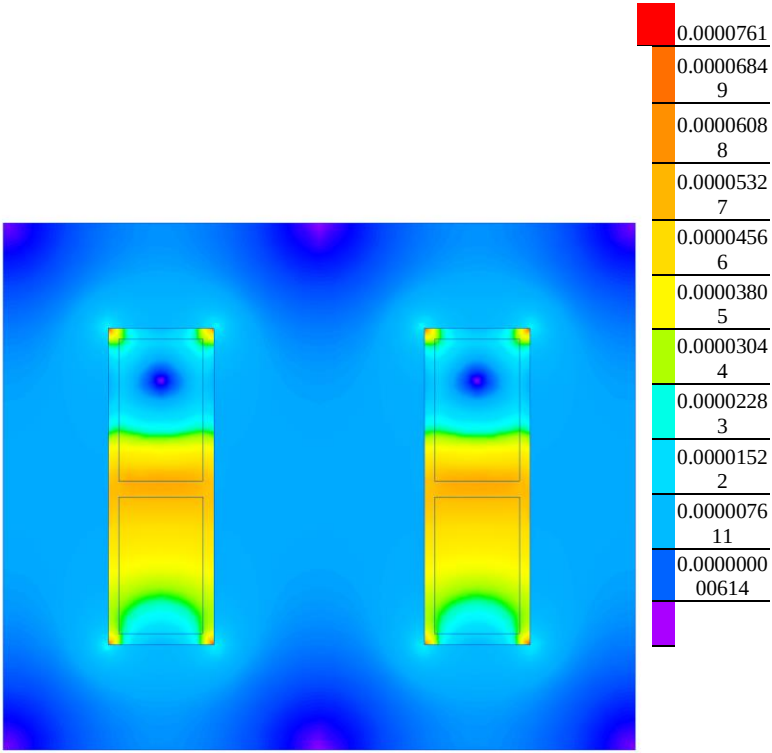
# Results

Field lines



# Results

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



# Nonlinear dependencies

No non-linear dependencies are used in this problem data