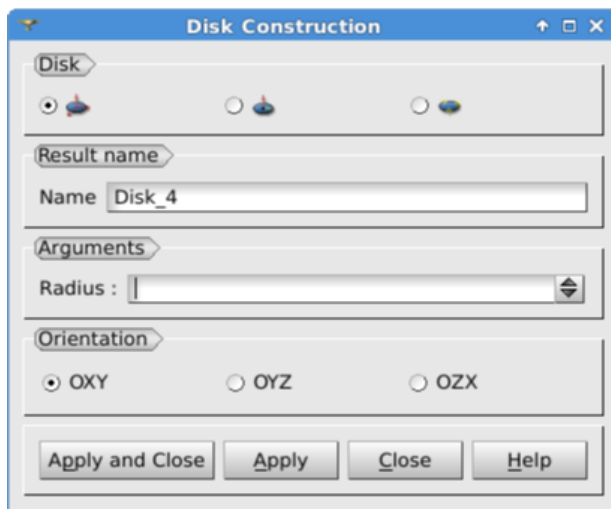


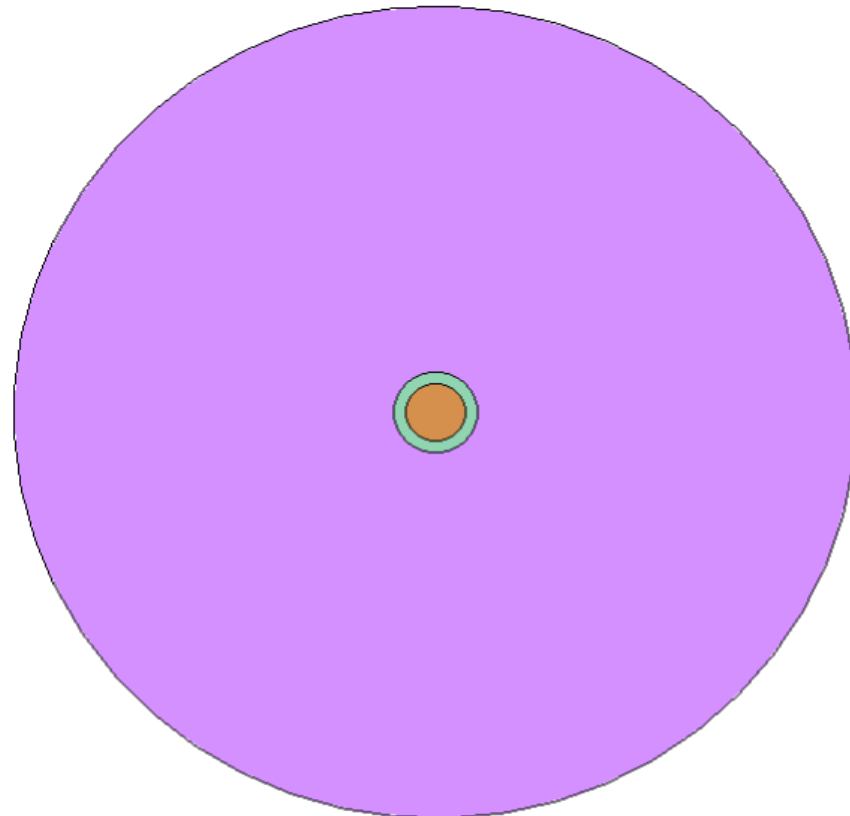
Transient Magnetics 2D

El proyecto CloudPYME (id: 0682_CLOUDPYME2_1_E) está cofinanciado por la Comisión Europea a través de el Fondo Europeo de Desarrollo Regional (FEDER), dentro de la tercera convocatoria de proyectos del Programa Operativo de Cooperación Transfronteriza España-Portugal 2007-2013 (POCTEP).

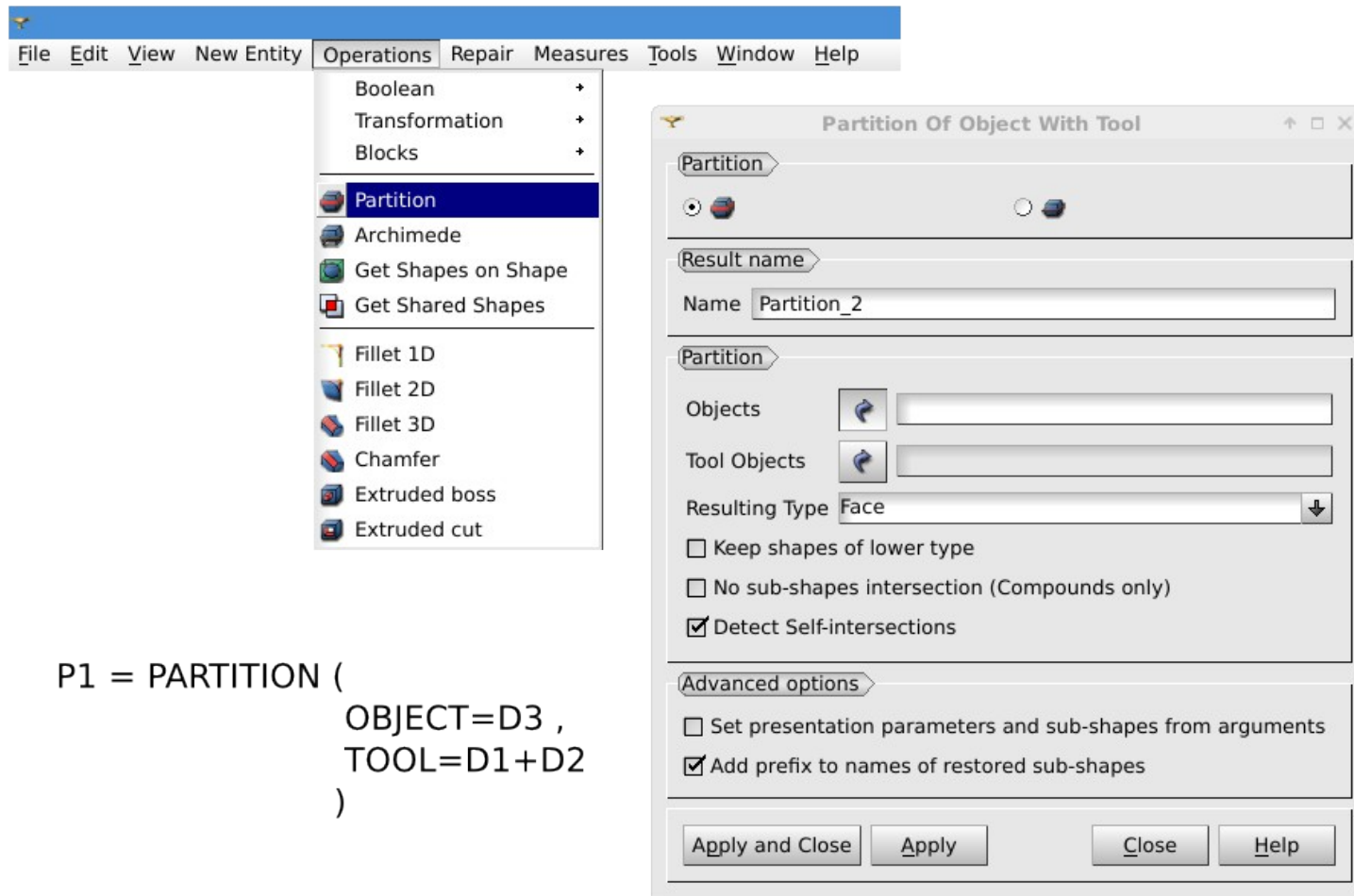
Transient magnetics 2D: Geometry



- D1 = DISK(R=1.0 , OXY)
- D2 = DISK(R=1.4 , OXY)
- D3 = DISK(R=14.0 , OXY)



Transient magnetics 2D: Geometry

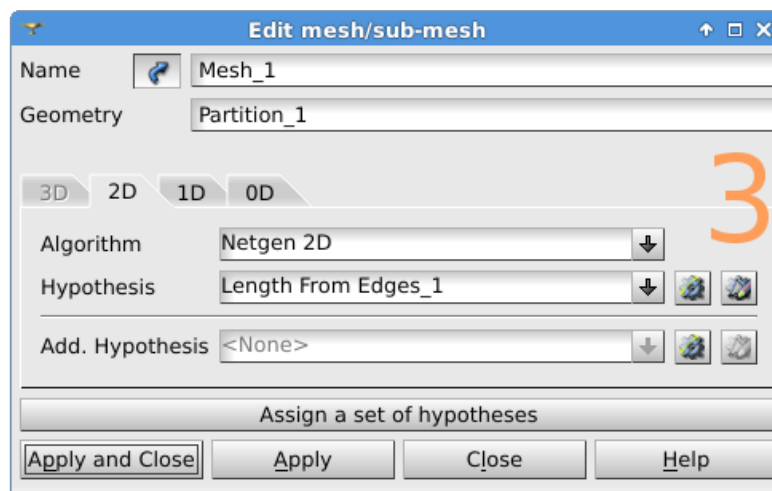
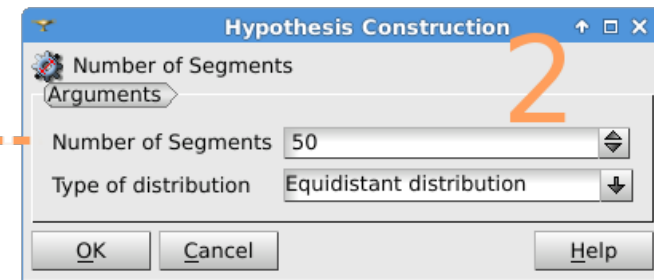
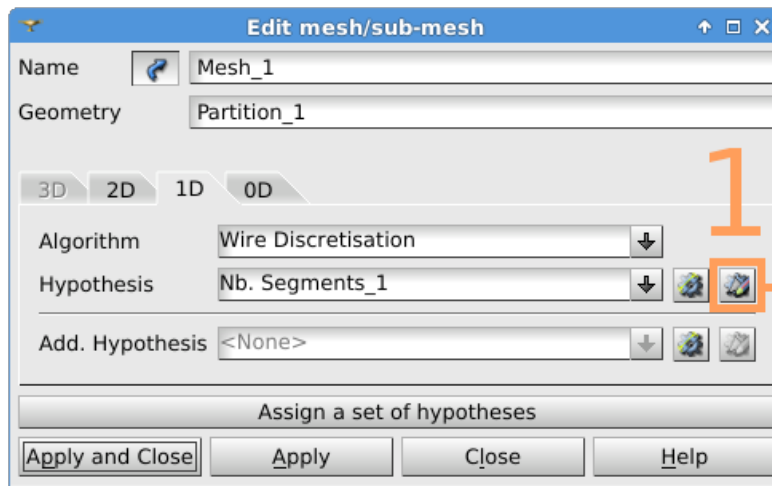


The image shows a CAD software interface. The 'Operations' menu is open, highlighting the 'Partition' option. To the right, the 'Partition Of Object With Tool' dialog box is displayed. The dialog has the following fields and options:

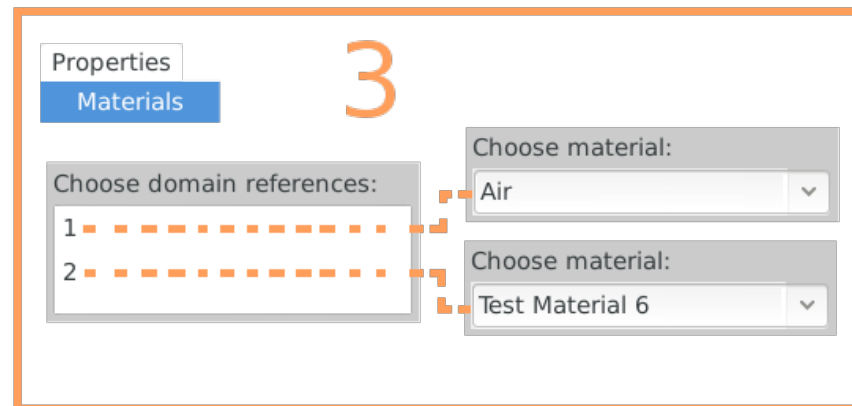
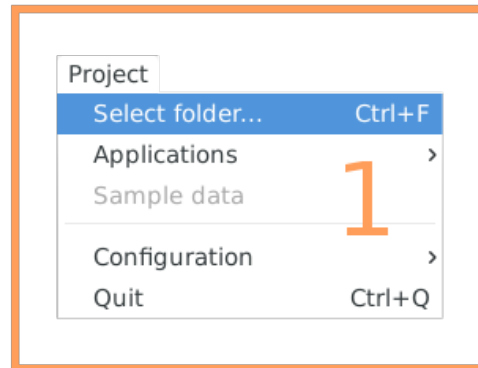
- Partition**: A section with a circular icon and a small sphere icon.
- Result name**: A text field containing 'Partition_2'.
- Partition**: A section with 'Objects' and 'Tool Objects' fields, each with a selection icon.
- Resulting Type**: A dropdown menu set to 'Face'.
- Keep shapes of lower type
- No sub-shapes intersection (Compounds only)
- Detect Self-intersections
- Advanced options**:
 - Set presentation parameters and sub-shapes from arguments
 - Add prefix to names of restored sub-shapes
- Buttons at the bottom: 'Apply and Close', 'Apply', 'Close', and 'Help'.

```
P1 = PARTITION (
    OBJECT=D3 ,
    TOOL=D1+D2
)
```

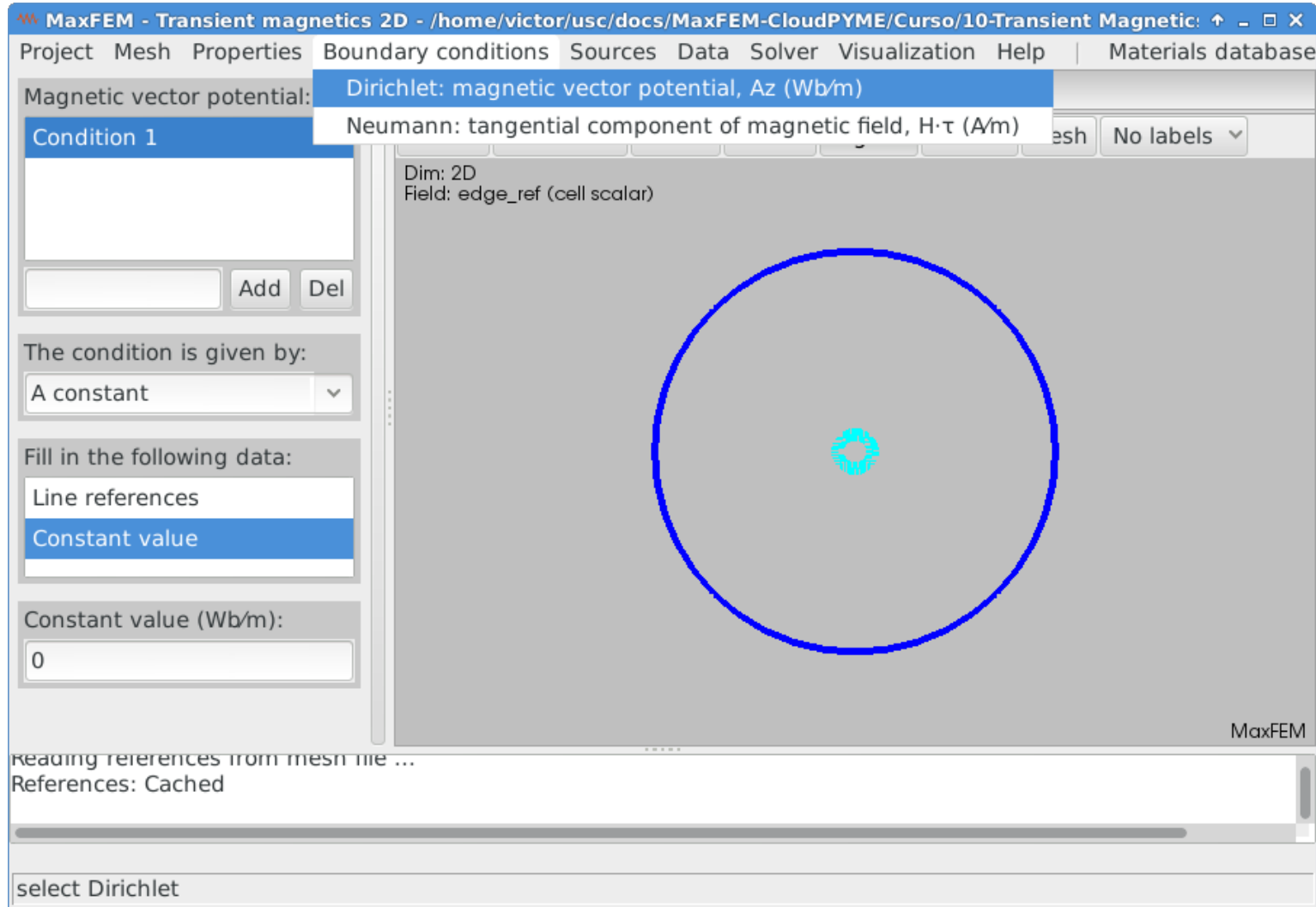
Transient magnetics 2D: Mesh



Transient magnetics 2D: MaxFEM



Transient magnetics 2D: MaxFEM



The screenshot shows the MaxFEM software interface for configuring a boundary condition. The window title is "MaxFEM - Transient magnetics 2D - /home/victor/usc/docs/MaxFEM-CloudPYME/Curso/10-Transient Magnetic: ↑ - □ ×". The menu bar includes Project, Mesh, Properties, Boundary conditions, Sources, Data, Solver, Visualization, Help, and Materials database.

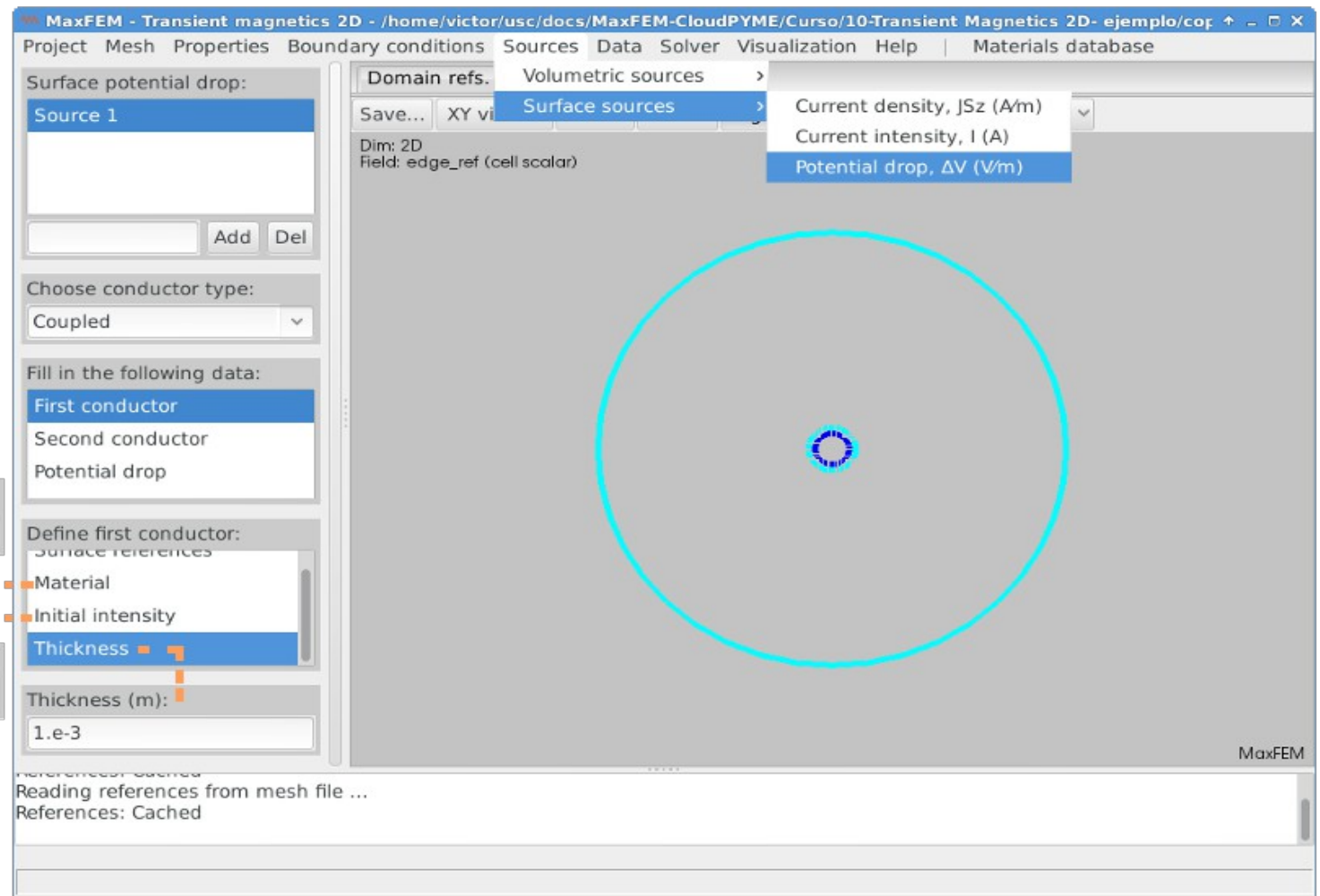
The "Boundary conditions" panel is active, showing "Magnetic vector potential:" with a dropdown menu set to "Dirichlet: magnetic vector potential, A_z (Wb/m)". Below this, "Condition 1" is selected, with a dropdown menu set to "Neumann: tangential component of magnetic field, $H \cdot \tau$ (A/m)". The "Field" is set to "edge_ref (cell scalar)".

The "The condition is given by:" section has a dropdown menu set to "A constant". The "Fill in the following data:" section has a dropdown menu set to "Constant value". The "Constant value (Wb/m):" input field contains the value "0".

The main workspace shows a 2D mesh of a circular domain with a central hole, highlighted in blue. The text "Dim: 2D" and "Field: edge_ref (cell scalar)" is visible in the workspace area.

The status bar at the bottom of the window shows "Reading references from mesh file ...", "References: Cached", and "select Dirichlet".

Transient magnetics 2D: MaxFEM



MaxFEM - Transient magnetics 2D - /home/victor/usc/docs/MaxFEM-CloudPYME/Curso/10-Transient Magnetics 2D- ejemplo/cof

Project Mesh Properties Boundary conditions Sources Data Solver Visualization Help Materials database

Surface potential drop:

Source 1

Add Del

Choose conductor type:

Coupled

Fill in the following data:

First conductor

Second conductor

Potential drop

Choose material:

Test Material 9

Initial intensity (A):

3000

Define first conductor:

Surface references

Material

Initial intensity

Thickness

Thickness (m):

1.e-3

Domain refs. Volumetric sources

Save... XY vi Surface sources

Current density, J_{Sz} (A/m)

Current intensity, I (A)

Potential drop, ΔV (V/m)

Dim: 2D

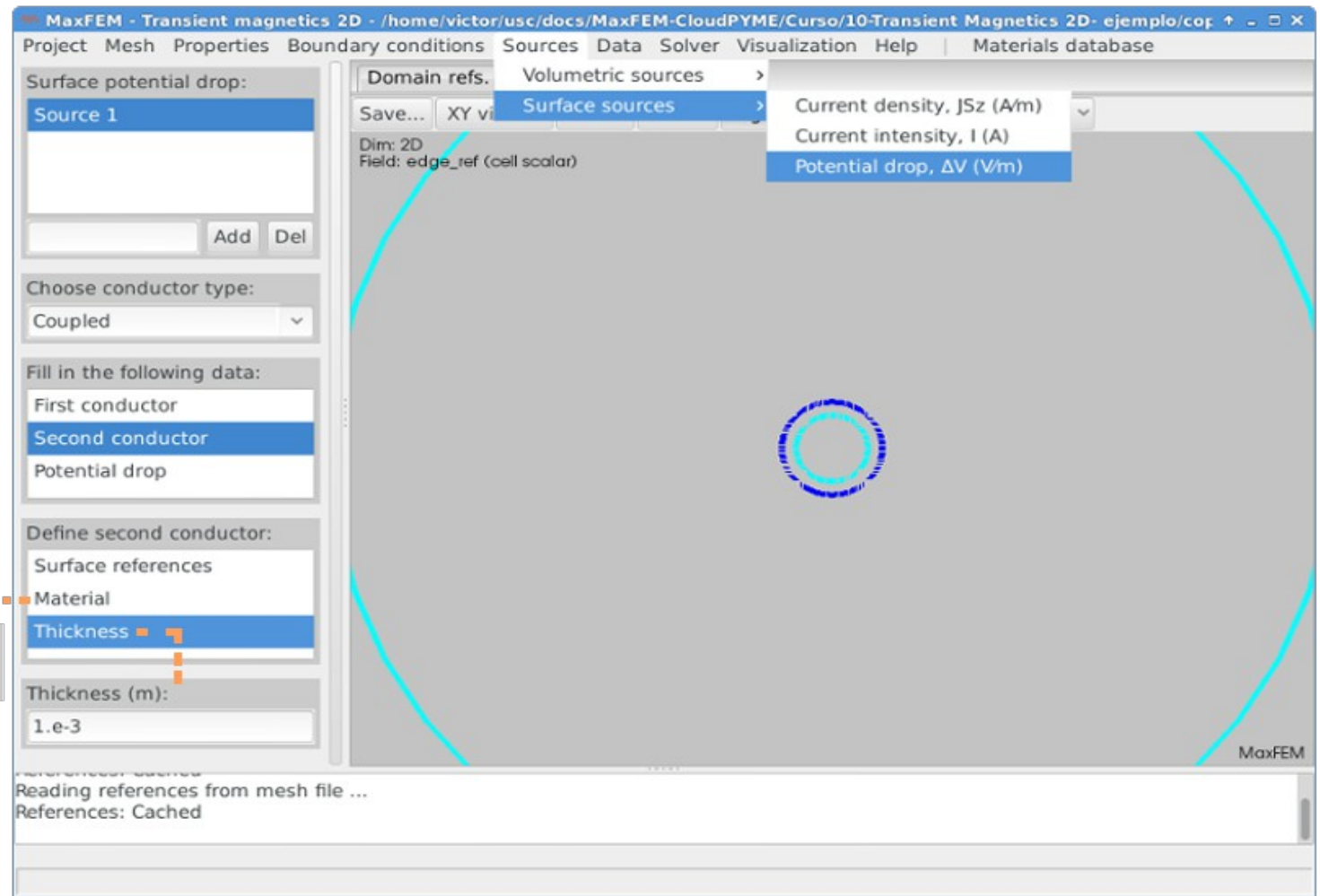
Field: edge_ref (cell scalar)

MaxFEM

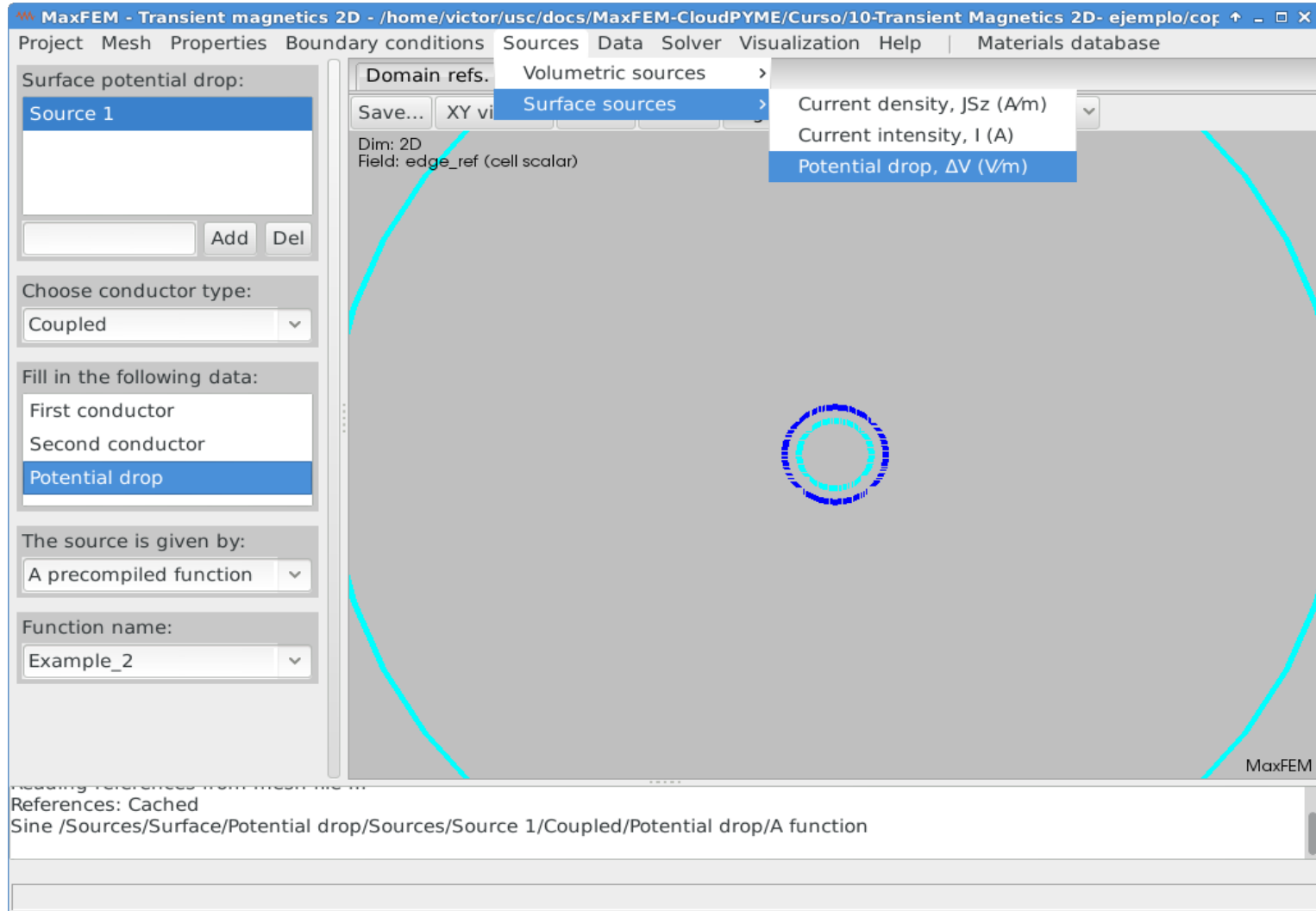
Reading references from mesh file ...

References: Cached

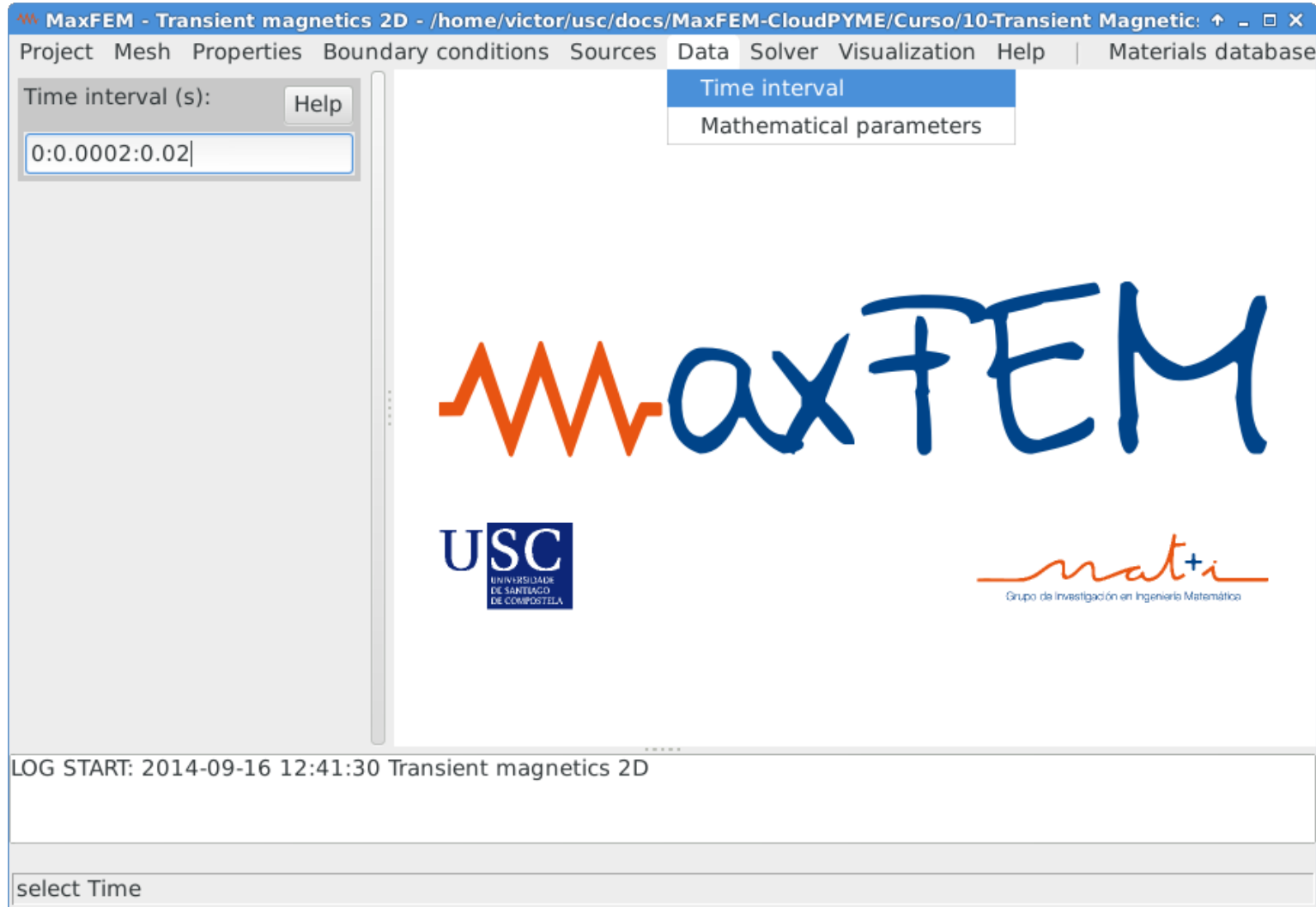
Transient magnetics 2D: MaxFEM



Transient magnetics 2D: MaxFEM

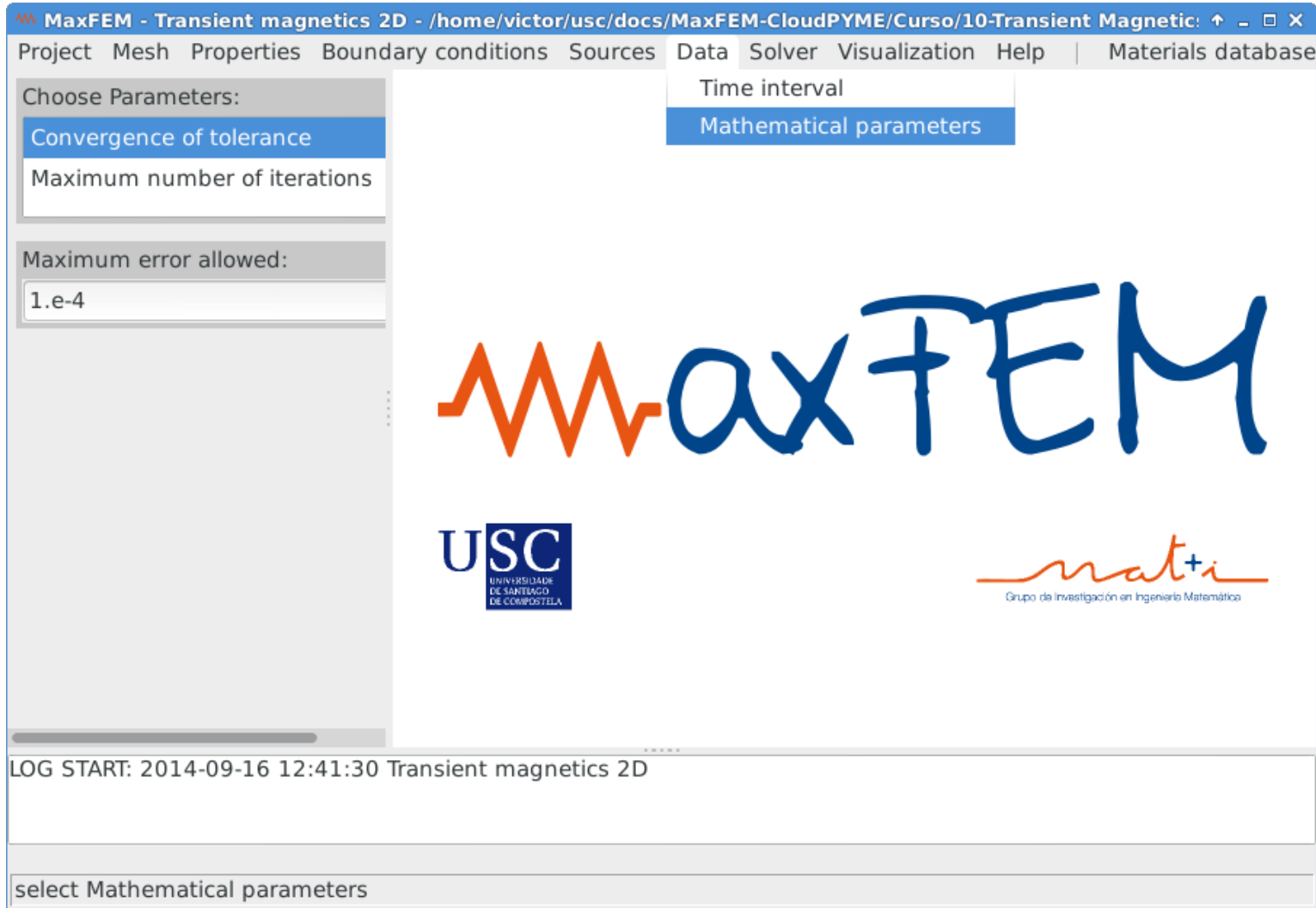


Transient magnetics 2D: MaxFEM



The screenshot shows the MaxFEM software interface. The title bar reads "MaxFEM - Transient magnetics 2D - /home/victor/usc/docs/MaxFEM-CloudPYME/Curso/10-Transient Magnetic: ↑ - □ ×". The menu bar includes "Project", "Mesh", "Properties", "Boundary conditions", "Sources", "Data", "Solver", "Visualization", "Help", and "Materials database". On the left, there is a "Time interval (s):" label with a "Help" button and a text input field containing "0:0.0002:0.02". A dropdown menu is open, showing "Time interval" (selected) and "Mathematical parameters". The main workspace displays the "MaxFEM" logo, where "Max" is in orange and "FEM" is in blue. Below the logo are the USC logo (UNIVERSIDADE DE SANTIAGO DE COMPOSTELA) and the "mat+i" logo (Grupo de Investigación en Ingeniería Matemática). At the bottom, a log window shows "LOG START: 2014-09-16 12:41:30 Transient magnetics 2D" and a "select Time" button.

Transient magnetics 2D: MaxFEM



The screenshot shows the MaxFEM software interface. The title bar reads "MaxFEM - Transient magnetics 2D - /home/victor/usc/docs/MaxFEM-CloudPYME/Curso/10-Transient Magnetic!". The menu bar includes "Project", "Mesh", "Properties", "Boundary conditions", "Sources", "Data", "Solver", "Visualization", "Help", and "Materials database".

On the left, there are two panels:

- Choose Parameters:** A list with "Convergence of tolerance" (highlighted in blue) and "Maximum number of iterations".
- Maximum error allowed:** A text input field containing "1.e-4".

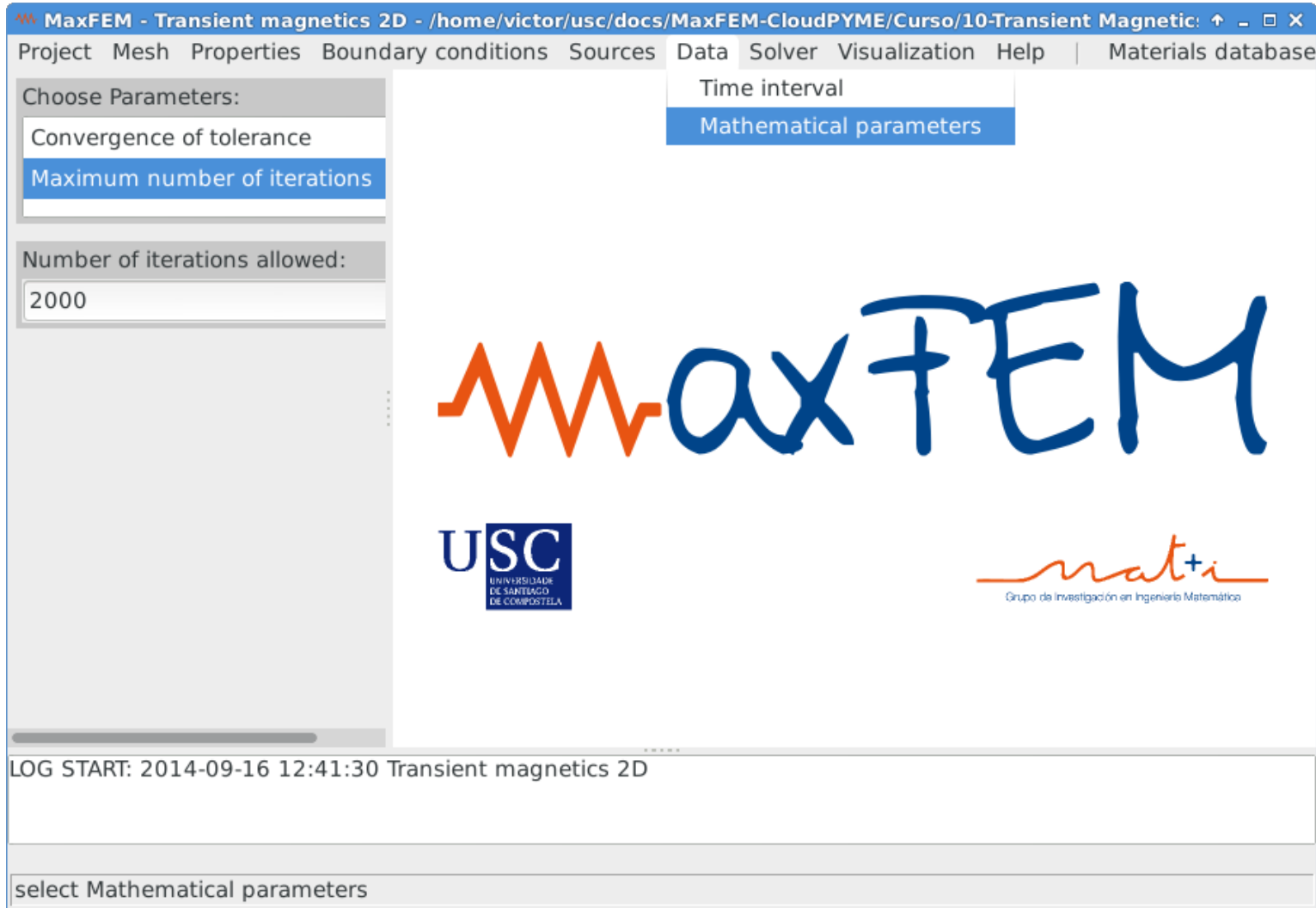
On the right, there are two dropdown menus:

- Time interval:** An empty dropdown menu.
- Mathematical parameters:** A dropdown menu with "Mathematical parameters" selected (highlighted in blue).

The main workspace contains the "MaxFEM" logo, where "Max" is in orange and "FEM" is in blue. Below the logo are the logos for USC (UNIVERSIDADE DE SANTIAGO DE COMPOSTELA) and mat+i (Grupo de Investigación en Ingeniería Matemática).

At the bottom, a log window shows "LOG START: 2014-09-16 12:41:30 Transient magnetics 2D" and a command prompt with the text "select Mathematical parameters".

Transient magnetics 2D: MaxFEM



The screenshot shows the MaxFEM software interface. The title bar reads "MaxFEM - Transient magnetics 2D - /home/victor/usc/docs/MaxFEM-CloudPYME/Curso/10-Transient Magnetic!". The menu bar includes "Project", "Mesh", "Properties", "Boundary conditions", "Sources", "Data", "Solver", "Visualization", "Help", and "Materials database". On the left, a "Choose Parameters:" panel is visible, with "Maximum number of iterations" selected. Below it, "Number of iterations allowed:" is set to "2000". The main workspace displays the "maxFEM" logo, the USC logo (UNIVERSIDADE DE SANTIAGO DE COMPOSTELA), and the "mat+i" logo (Grupo de Investigación en Ingeniería Matemática). At the bottom, a log window shows "LOG START: 2014-09-16 12:41:30 Transient magnetics 2D" and a command prompt with "select Mathematical parameters".