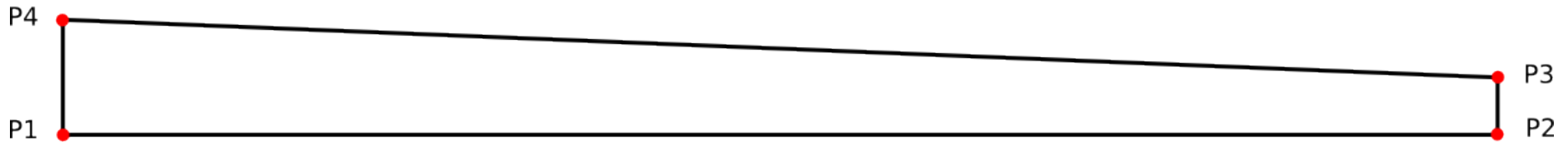


Direct Current 3D

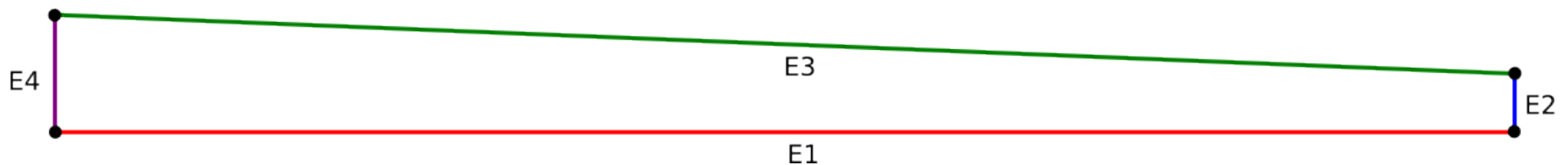
El proyecto CloudPYME (id: 0682_CLOUDPYME2_1_E) está cofinanciado por la Comisión Europea a través de el Fondo Europeo de Desarrollo Regional (FEDER), dentro de la tercera convocatoria de proyectos del Programa Operativo de Cooperación Transfronteriza España-Portugal 2007-2013 (POCTEP).

Direct Current 3D: Geometry

P1 = (0 , 0)
P2 = (0.05 , 0)
P3 = (0.05 , 0.002)
P4 = (0 , 0.004)

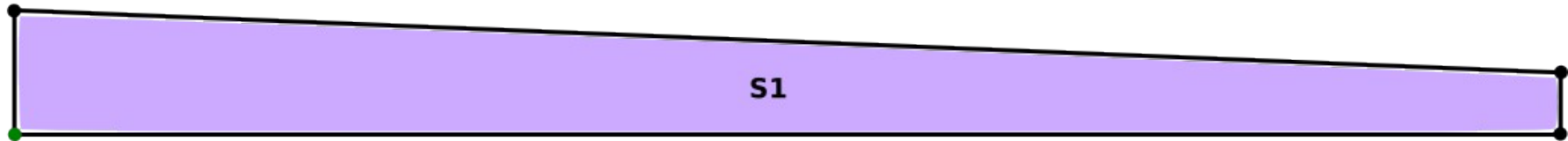


E1 = LINE(P1 , P2)
E2 = LINE(P2 , P3)
E3 = LINE(P3 , P4)
E4 = LINE(P4 , P1)

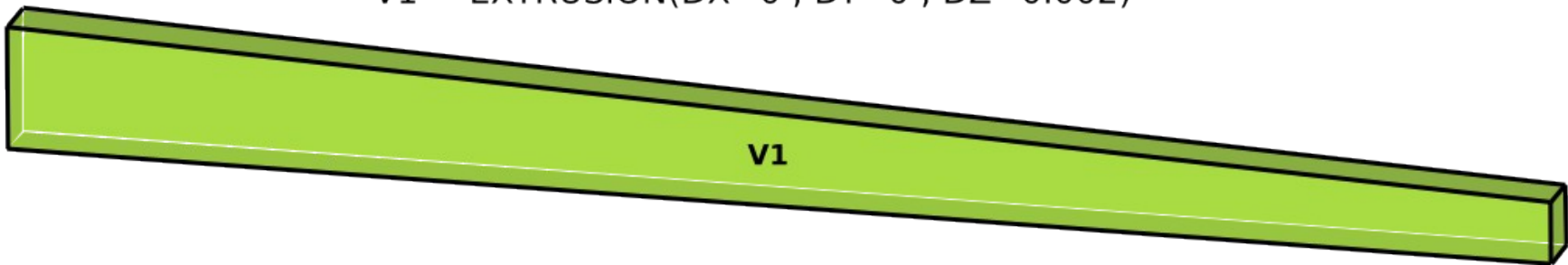


Direct Current 3D: Geometry

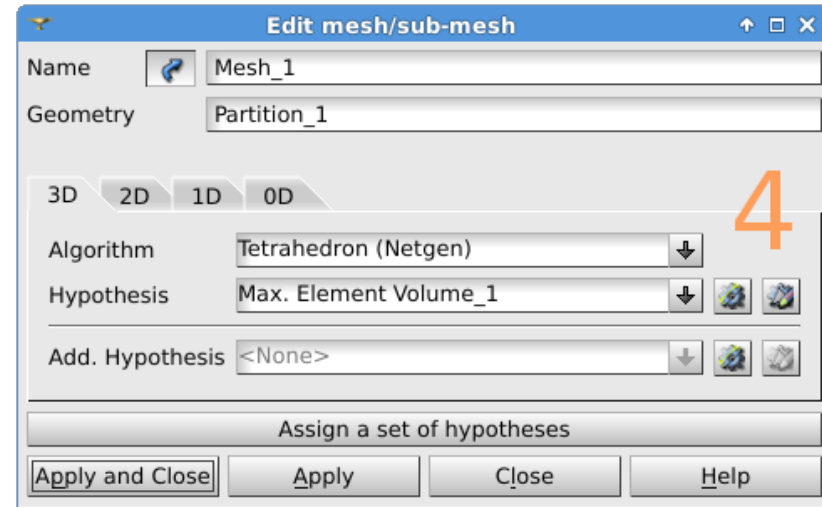
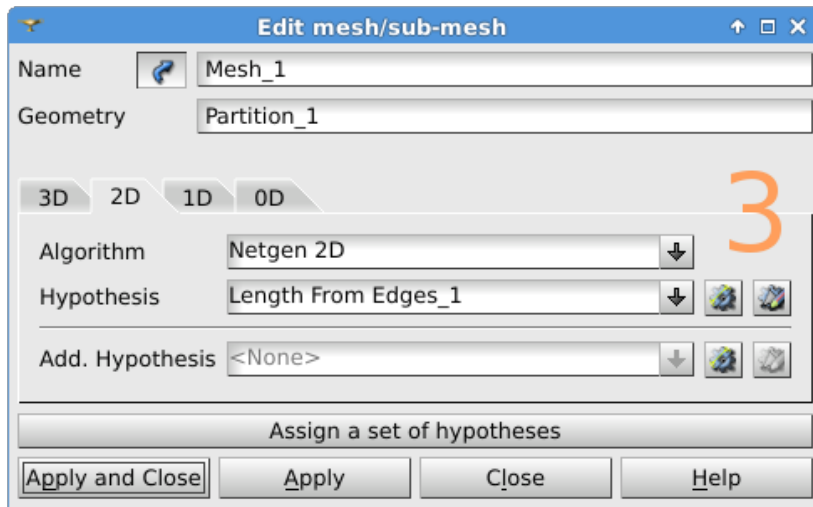
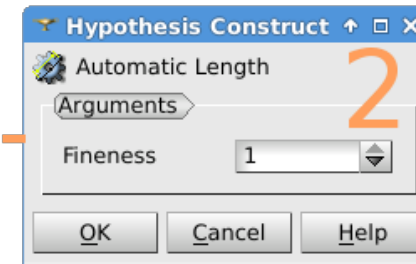
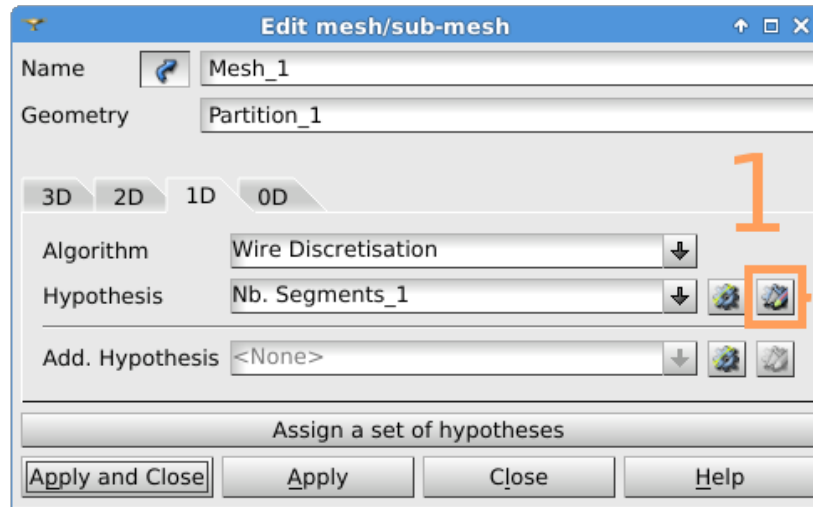
$$S1 = \text{FACE}(E1, E2, E3, E4)$$



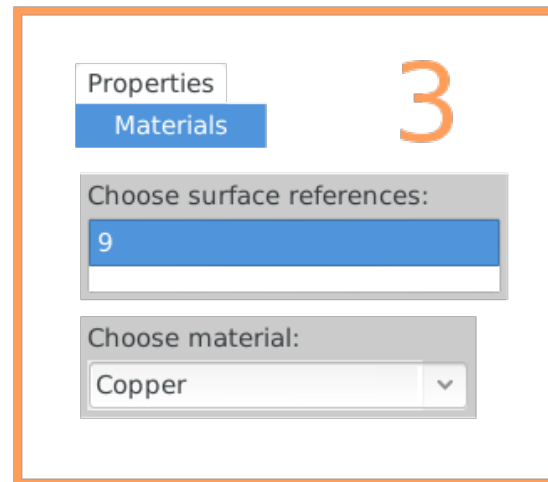
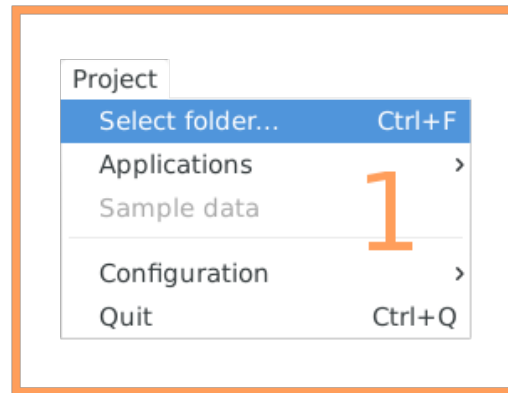
$$V1 = \text{EXTRUSION}(DX=0, DY=0, DZ=0.002)$$



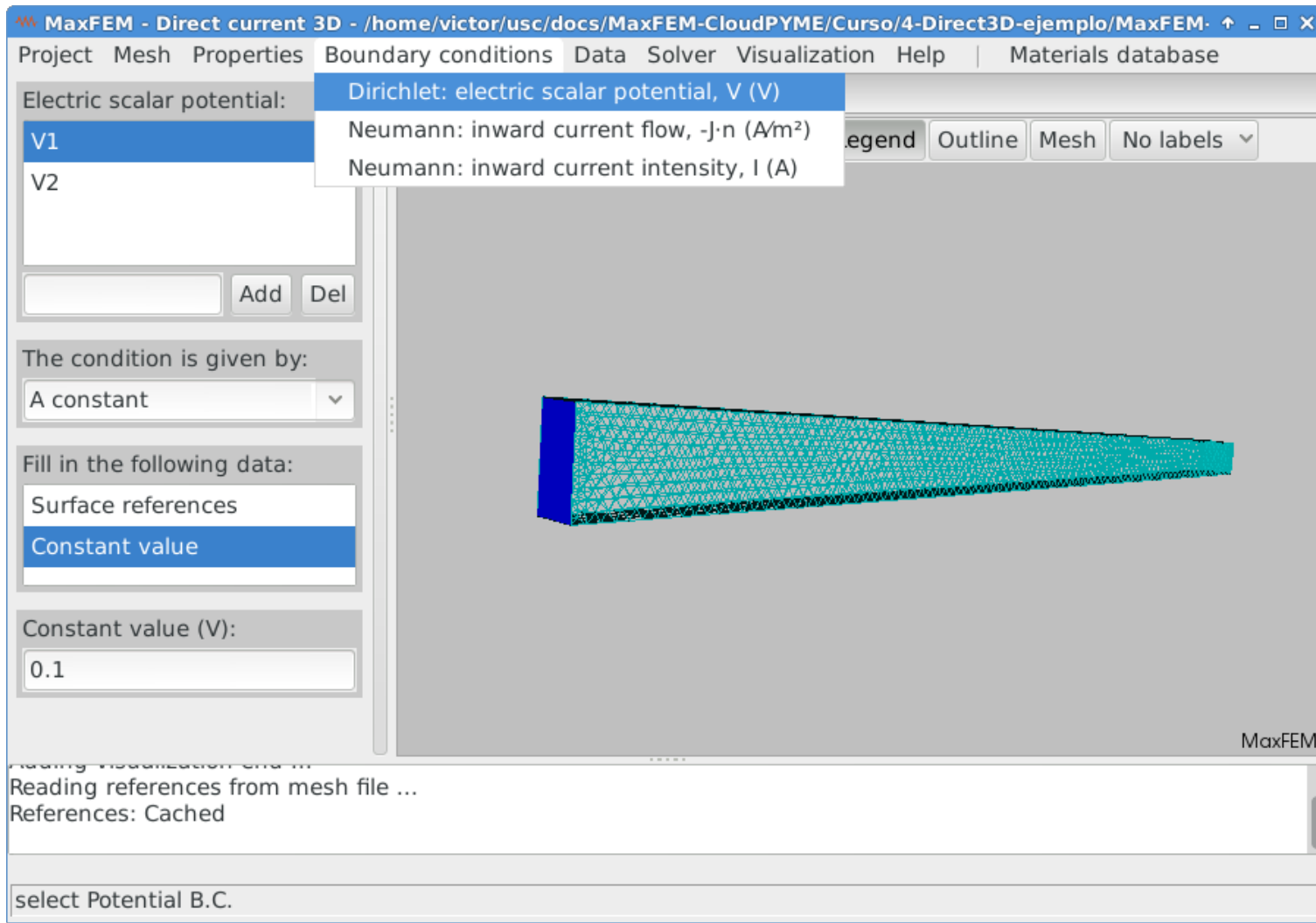
Direct Current 3D: Mesh



Direct Current 3D: MaxFEM



Direct Current 3D: MaxFEM



The screenshot shows the MaxFEM software interface for a Direct Current 3D simulation. The main window displays a 3D mesh of a tapered cylinder. The left sidebar contains the following configuration options:

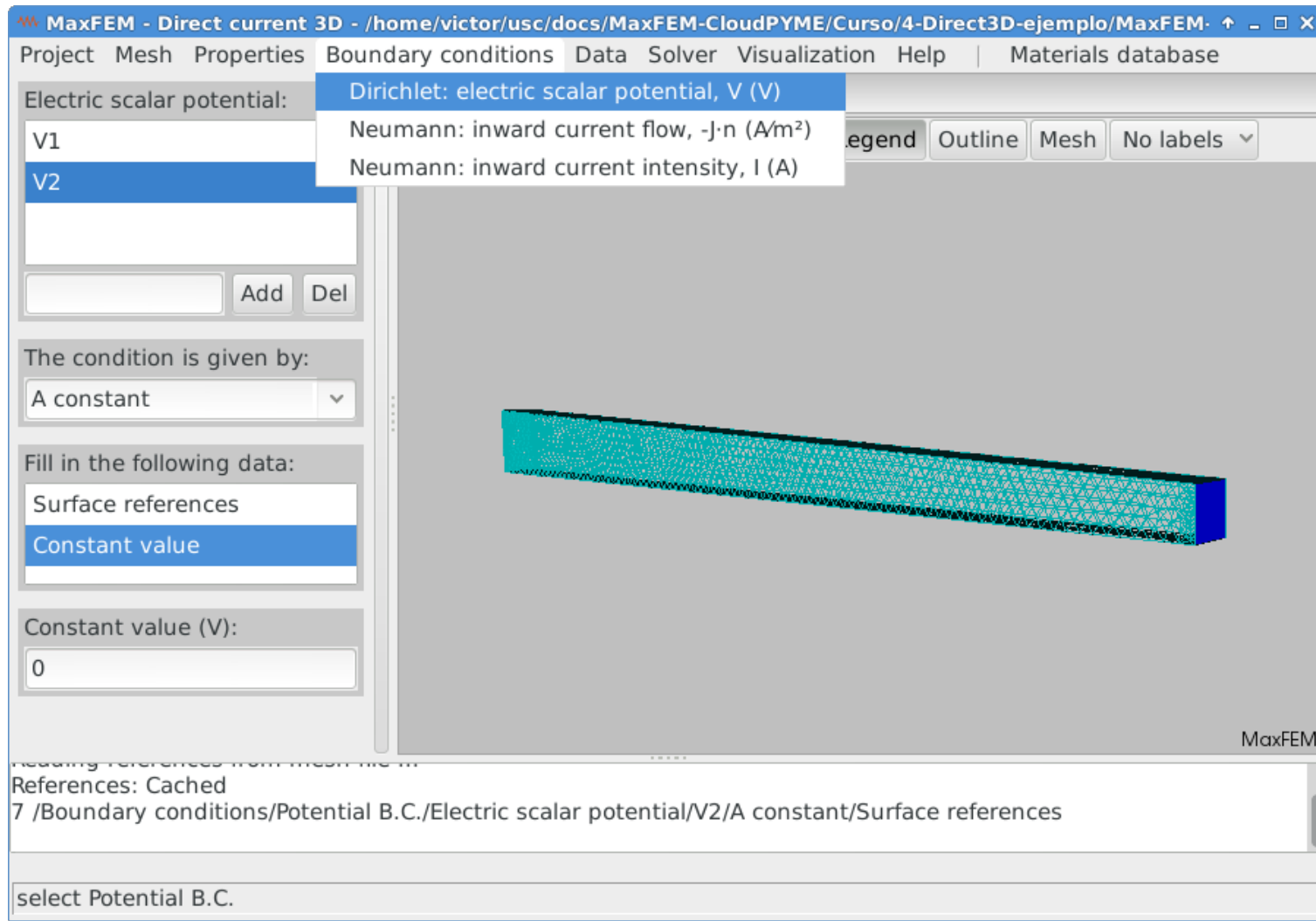
- Electric scalar potential:** A list with 'V1' selected and 'V2' below it. Below the list are 'Add' and 'Del' buttons.
- The condition is given by:** A dropdown menu set to 'A constant'.
- Fill in the following data:** A list with 'Surface references' and 'Constant value' (selected).
- Constant value (V):** A text input field containing '0.1'.

A context menu is open over the 'Boundary conditions' tab, showing three options:

- Dirichlet: electric scalar potential, V (V)
- Neumann: inward current flow, $-j \cdot n$ (A/m^2)
- Neumann: inward current intensity, I (A)

At the bottom of the interface, a status bar shows the message: 'Reading references from mesh file ... References: Cached'. A command prompt at the very bottom contains the text: 'select Potential B.C.'

Direct Current 3D: MaxFEM



MaxFEM - Direct current 3D - /home/victor/usc/docs/MaxFEM-CloudPYME/Curso/4-Direct3D-ejemplo/MaxFEM

Project Mesh Properties **Boundary conditions** Data Solver Visualization Help | Materials database

Electric scalar potential:

- V1
- V2**

Dirichlet: electric scalar potential, V (V)

Neumann: inward current flow, $-j \cdot n$ (A/m^2)

Neumann: inward current intensity, I (A)

legend Outline Mesh No labels

The condition is given by:

A constant

Fill in the following data:

Surface references

Constant value

Constant value (V):

0

References: Cached

7 /Boundary conditions/Potential B.C./Electric scalar potential/V2/A constant/Surface references

select Potential B.C.

