Pregunta **1**

No s'ha respost encara

Puntuat sobre 10,00

We consider the Poisson heat diffusion in a piece meshed by the file meshClipQuiz.m given at Atenea. As it is a quadrilateral mesh, we convert it in a triangular one using the matlab function **generateTriangFromQuadMesh**. We suppose that the conductivity is $k_c = 1$ and also $f = 1$, in some convenient units. Looking at the shape of the piece as can be seen in the figure, we suppose that the temperature on the left vertical and on the lower horizontal boundary parts of the piece are $T = 133.00^{\circ}C$ and $T = 50^{\circ}C$, respectively. Answer the following questions:

(a) (3 points) $K_{400,400}$,the entry $(400, 400)$ of the stiffness global matrix is

- 8.4009e+00
- 9.2418e+00
- 4.6750e+00
- Leave it empty (no penalty)
- 1.1048e+00

Hint1: The value of $K_{300,300}$ is 4.072380e+00

(b) (4 points) The minimum of the values of Q on the left vertical boundary is

- Leave it empty (no penalty)
- -2.8530e+01
- -2.0179e+01
- -4.0338e+01
- -2.1793e+01

Hint2: The maximum in absolute value of Q over all the nodes is 2.1674e+01

(c) (3 points) Now consider that circle exterior boundary is no more isolated, and a natural condition $q_n = -0.40$ is applied instead. Now the minimum of the values of Q on the left vertical boundary is:

- -1.8773e+01
- -1.0807e+01
- -1.5563e+01
- Leave it empty (no penalty)
- -1.7453e+01

Hint3: The maximum in absolute value of Q over all the nodes is 2.0269e+01

Torna a començar | Desa | Emplena amb les respostes correctes | Envia i acaba | Tanca la previsualització

Informació tècnica

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Expandeix-ho tot

Opcions de l'intent

Opcions de visualització