6 Uždavinys

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1 Bedimensis modelis

$$\begin{aligned}\frac{\partial c_1}{\partial t} &= -3c_1c_2 + D\Delta c_1 \\ \frac{\partial c_2}{\partial t} &= -5c_1c_2 + D\Delta c_2 \\ \frac{\partial c_3}{\partial t} &= 2c_1c_2\end{aligned} \tag{2}$$

kur c_1, c_2, c_3 yra bedimensė medžiagų koncentracija, Δ - Laplaso operatorius, t - laikas, D - bedimensis medžiagų c_1 ir c_2 difuzijos koeficientas.

1.1 Elementų maišymasis stačiakampio gretasienio skerspjūvyje

Pritaikius **??**

$$\begin{aligned}c_1(x,y,0) &= \begin{cases}1, \text{if } x \in A \\ 0, \text{otherwise}\end{cases} \quad , \quad (x,y) \in [0,L] \times [0,L] \\ c_2(x,y,0) &= \begin{cases}1, \text{if } x \notin A \\ 0, \text{otherwise}\end{cases} \quad , \quad (x,y) \in [0,L] \times [0,L] \\ c_3(x,y,0) &= 0 \quad , \quad (x,y) \in [0,L] \times [0,L]\end{aligned} \tag{3}$$

where $A = [0, 0.5L] \times [0, 0.5L] \cup [0.5L, L] \times [0.5L, L]$.

1.2 Boundary conditions

$$\begin{aligned}\frac{\partial u}{\partial x}\Big|_{x=0} = \frac{\partial u}{\partial x}\Big|_{x=L} = 0, \quad y \in [0,L], \quad t \in [0,T] \\ \frac{\partial u}{\partial y}\Big|_{y=0} = \frac{\partial u}{\partial y}\Big|_{y=L} = 0, \quad x \in [0,L], \quad t \in [0,T]\end{aligned} \tag{4}$$