# INF 5620
# Fenics Project

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In this project we are going to work with the nonlinear diffusion model

$$\varrho u_t = \nabla \cdot (\alpha(u)\nabla u) + f(\mathbf{x}, t) \tag{1}$$

With $\varrho$ is an constant, and $\alpha(u)$ is a known function of u .The following initial and boundary condition apply

$$u(\mathbf{x}, 0) = I(x) \qquad \frac{\partial u}{\partial n} = 0 \tag{2}$$

## Exercise a