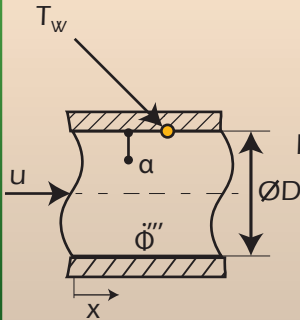




HEATQUIZ



A fluid with internal heat generation flows through a pipe with a constant and uniform wall temperature. Derive the energy balance to describe the temperature profile in axial direction not neglecting axial diffusion.

Hints:

- The problem is 1-D and steady-state.
- $T_w < T(x)$

Fluid properties:

$$\lambda, c, \rho, u$$

Solution:

