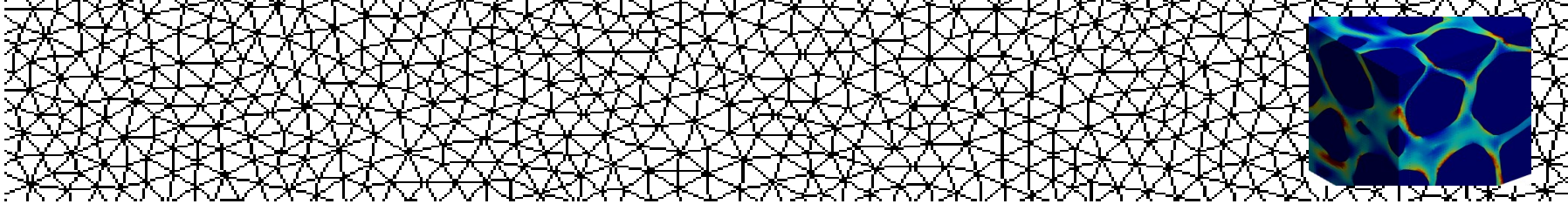

Structural Analysis and Finite Elements

Computer labworks – plate with a hole

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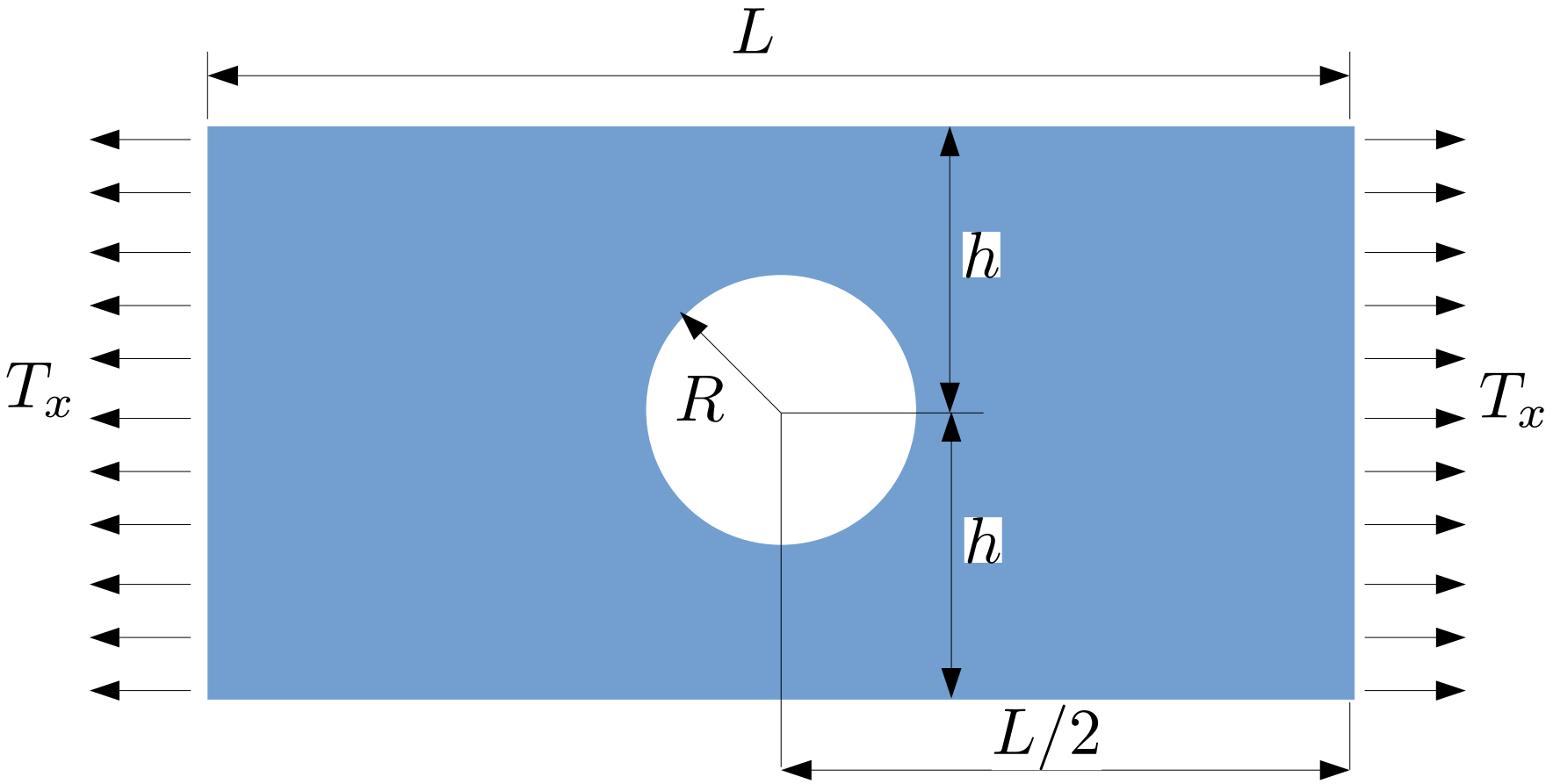
The physical problem to model by FE:

- thin plate with $L = 520$ mm, $h = 180$ mm, $R = 3.2$ mm, $t = 2$ mm
- steel material,
- loading by uniform surface traction $T_x = 81$ N/mm^2



Task 0: building model zero

- 2D model creation of the plate with a hole problem (geometry, loads, BC, material),
- find a possible closed form solution for the problem,
- quality of the approximation by model zero?

Task I: model enhancement by a 3 step h-refinement

- determine regions in which h-refinement is beneficial,
- create model h1 and h2 with increasing h-refinement,
- quality of the approximation of h1 and h2 – convergence curve?