Final Project Report

Name: 高银骏 UID: 12111320 Date: 2025.1.10

Task Description

Task Decomposition

Mathematical Model

Finite Element Model

Mesh

Results and Errors

Stress concentrations

About the exact solution:

On the boundary of the hole, the radius equals , which is . We have the stress expression:

When equals , the stress becomes zero.

As the question is analyzed in a quarter, varies from to . So varies from +1 to -1. When equals , the stress reaches its maximum value, zero.

Reference:

M.H. Sadd, Elasticity: Theory, Applications, and Numerics, pp. 176-177