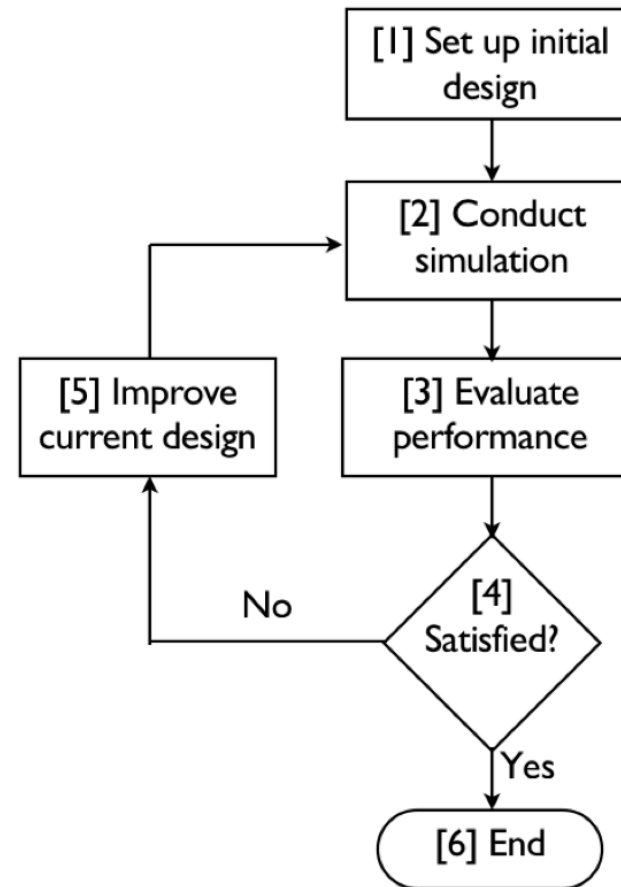


Chapter 8

Optimization

- 8.1 Flexible Gripper
- 8.2 Triangular Plate
- 8.3 Review

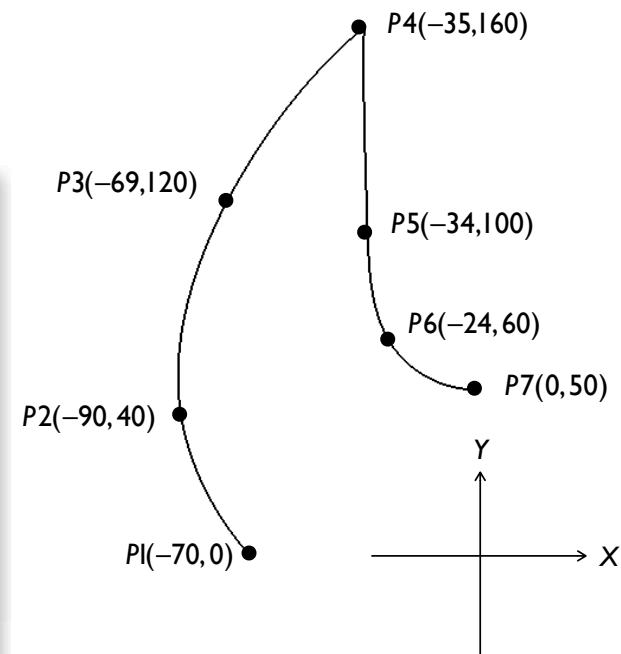


Section 8.1

Flexible Gripper

Problem Description

- Positions of the P_2 , P_3 , and P_6 are free to be changed.
- The idea is to fix the X-coordinates of these points and adjust their Y-coordinates to achieve a better GA value.
- Allowable adjustment ranges are 10 mm for P_2 , 20 mm for P_3 , and 5 mm for P_6 .
- The maximum stress should not exceed 15 MPa.



Techniques/Concepts

- Input Parameters
- Output Parameters
- Design Points
- Optimization
- Objectives and Constraints
- Optimization algorithms
- Current Design

A: Static Structural

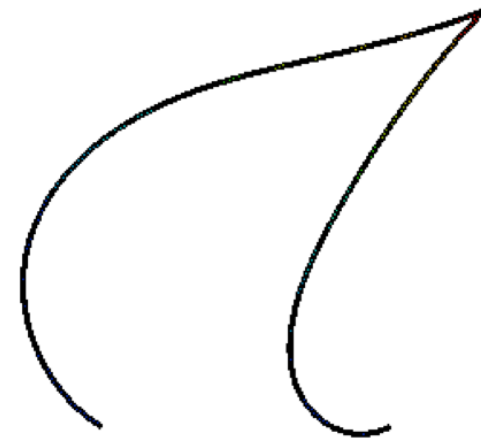
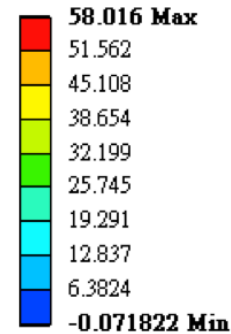
X Axis - Directional Deformation

Type: Directional Deformation(X Axis)

Unit: mm

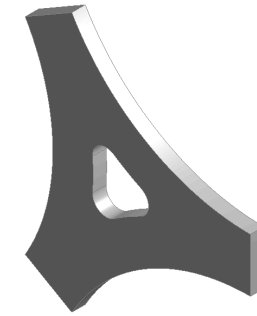
Global Coordinate System

Time: 1.



Section 8.2

Triangular Plate

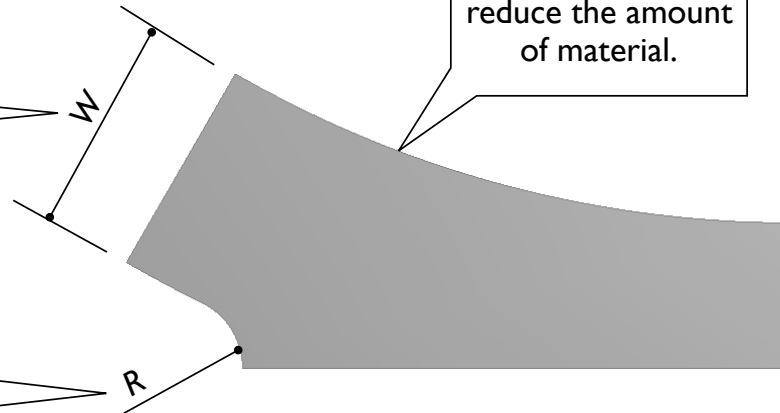


Problem Description

[2] The initial value of the width of the bridge is 30 mm and its allowable range is 20-30 mm.

[3] The initial value of the radius of the fillet is 10 mm and its allowable range is 5-15 mm.

[1] we want to change the values of W and R to reduce the amount of material.



Techniques/Concepts

- No additional techniques/concepts are introduced.

D: 2D Symmetric Model

Equivalent Stress

Type: Equivalent (von-Mises) Stress

Unit: MPa

Time: 1

