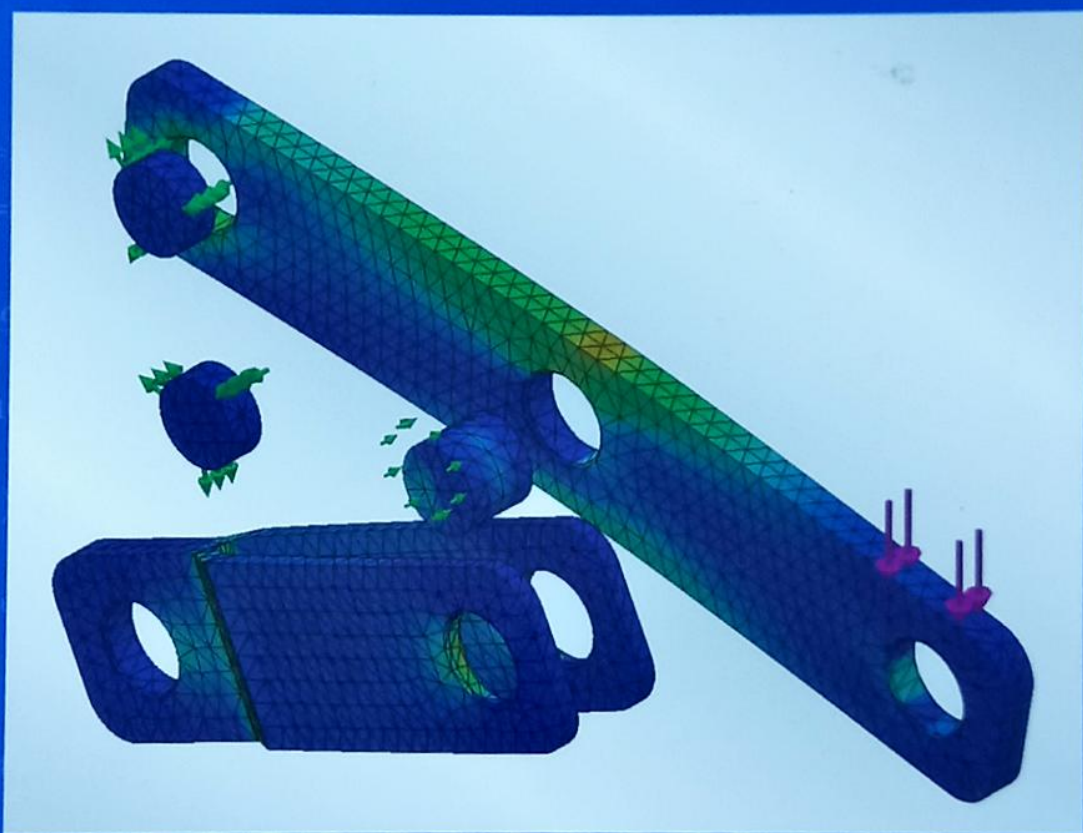


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$$L_{AC} := 500 \cdot \text{mm} \quad b :=$$

$$\theta := 30 \cdot \text{deg} \quad \phi :=$$

$$F_{Cy} := -1000 \cdot \text{N}$$

$$F_{Cy} \cdot L_{AC} = -F_{By} \cdot \frac{L_{AC}}{2}$$

$$F_{BD} := \frac{F_{By}}{\sin(\theta)} = -4 \cdot 10^3$$

$$F_{Dy} := -F_{By} = (2 \cdot 10^3)$$

axial stress in inclined link

MOI without hole

MOI with hole (at center)

Inclined link length

axial deformation in the inclined link: $\delta_a := \frac{F_{BD} \cdot L_l}{A \cdot E} = -0.003 \text{ mm}$

Y component of axial deformation: $\delta_{ay} := \delta_a \cdot \cos(\theta) = -0.003 \text{ mm}$

Y bending deformation in the link: $\delta_{by} := \frac{F_{Cy} \cdot \left(\frac{L_{AC}}{2}\right)^3}{3 \cdot E \cdot I_h} = -0.018 \text{ mm}$

Y deformation in the link: $\delta_y := \delta_{ay} + \delta_{by} = -0.02 \text{ mm}$

$$\cos(\theta) = \frac{2}{L_l} \quad L_l := \left(\frac{2}{\cos(\theta)} \right) = 288.675 \text{ mm}$$

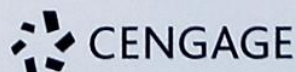
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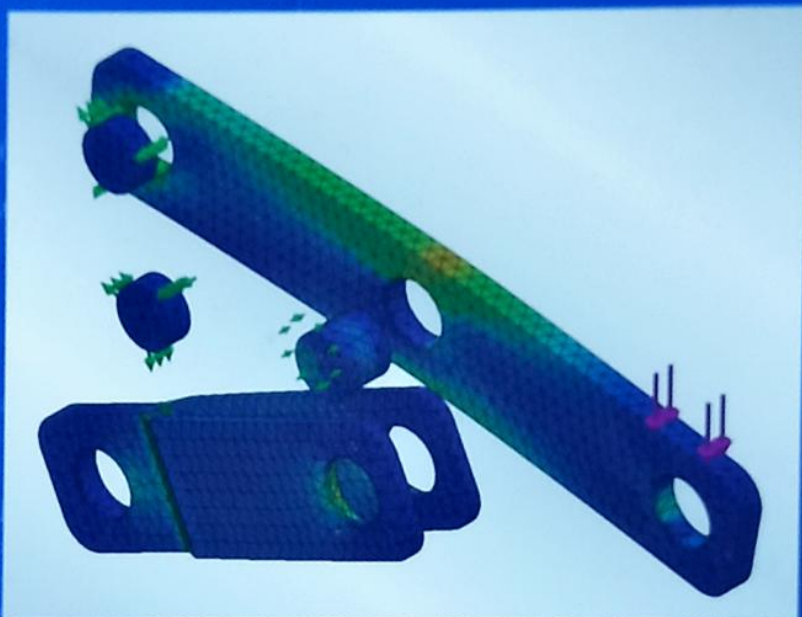
Contents

Preface		viii
CHAPTER 1	Overview of the Finite Element Analysis Process	1
1.1	Introduction	1
1.2	Problem Definition	3
1.3	Geometry: 3D Solids Model	5
1.4	Configure Options for the Simulation	5
1.5	Material Property Values	10
1.6	Restraints: Magnitudes, Locations, and Directions	12
1.7	Loads: Magnitudes, Directions, Locations, and Types	14
1.8	Mesh	14
1.9	Execution and Results	15
1.10	Investigation and Interpretation of Results	17
1.11	Investigations	24
1.12	Potential Errors	30
1.13	FEA Application	32
CHAPTER 2	1D Spring Element Model	43
2.1	Introduction	43
2.2	Problem Definition	44
2.3	General Exact Solution	44
2.4	Specifically Valued Exact Solution	45
2.5	Solution with Finite Elements	47
2.6	Investigation	54
CHAPTER 3	Truss and Beam Element Models	67
3.1	Introduction	68
3.2	2D Spring-Element Model	69
3.3	Pin and Roller Restraints	70
3.4	FEA Rules	70
3.5	Creating Truss-Element Models	72
3.6	Analysis of a Truss-Element Model	74
3.7	Investigation	84
3.8	Defeaturing	86
3.9	Introduction	89
3.10	Beam Directions and Sign Conventions	90
3.11	Analysis of a Beam-Element Model	92
3.12	Interpretation of Results	96

CHAPTER 4	3D Tetrahedral Element Models	105
4.1	Introduction	106
4.2	Mesh Design	106
4.3	Adaptive Methods	116
4.4	3D Stress	129
4.5	Poisson Effect	134
4.6	Investigation	137
4.7	Interpretation of Results	145
CHAPTER 5	3D Solid Model Loads	159
5.1	Simulating Physical Reality	159
5.2	Edge Loads	160
5.3	Split-Surface Loads	161
5.4	Vertex and Point Loads	163
5.5	Distributed Force Loads	165
5.6	Remote Loads	166
5.7	Pressure	168
5.8	Torque	174
5.9	Bearing Loads	177
5.10	Gravity	179
5.11	Centrifugal Loads	181
5.12	Distributed Mass	182
5.13	Thermal Effects	183
5.14	Combined Loading	186
CHAPTER 6	3D Solid Model Restraints	195
6.1	Introduction	196
6.2	Degrees of Freedom	196
6.3	Restraint Types and Symbols	196
6.4	Planar Reference Geometry	199
6.5	Cylindrical Reference Geometry	201
6.6	Spherical Reference Geometry	202
6.7	Nonzero Displacement	202
6.8	Advanced Restraint Group	203
6.9	Contradicting Restraints	206
6.10	Model Stability	207
6.11	Axially Loaded Bar Example	210
CHAPTER 7	Failure Criteria	227
7.1	Introduction	227
7.2	Brittle and Ductile Materials	229
7.3	Von Mises Failure Criterion	229
7.4	Tresca (Maximum Shear Stress) Failure Criterion	230
7.5	Maximum Normal Stress (Coulomb) Failure Criterion	231
7.6	Mohr-Coulomb Failure Criterion	232

7.7	FOS Results	232
7.8	Custom Materials	238
7.9	Interpretation of FOS Results	241
CHAPTER 8	Symmetry Models	247
8.1	Introduction	248
8.2	Plate-with-Hole Model	248
8.3	Reflective Symmetry	250
8.4	Cyclic Symmetry	267
CHAPTER 9	Assembly Models	287
9.1	Introduction	288
9.2	Beam Assembly Model Example	289
9.3	Positioning Components	291
9.4	Beam Assembly Solid Model	293
9.5	Assembly FEA	303
9.6	Beam Assembly FEA Example	308
9.7	Local Analysis of Assembly Models	318
CHAPTER 10	Special Topics	331
10.1	Shell Element Models	332
10.2	Frequency Analysis	338
10.3	Buckling Analysis	342
10.4	Heat Transfer	348
APPENDICES		365
A1	Simple 3D Solid Models	365
A2	Simple PTC Mathcad Worksheets	382
A3	Special Mechanical Connectors	395
Index		426

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