Fluid-Structure Interaction Simulation of Wind Loads on High Rise Buildings

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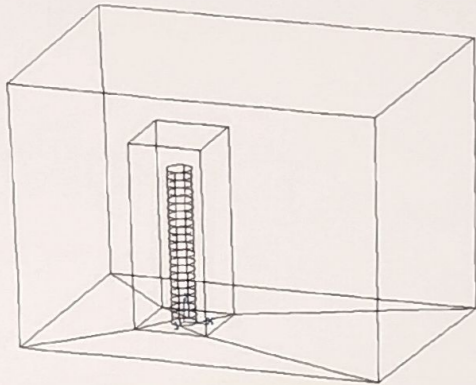Advisors: Dr. O. Olatidoye, Dr. S. Sarathy, Dr. K. Shujaee
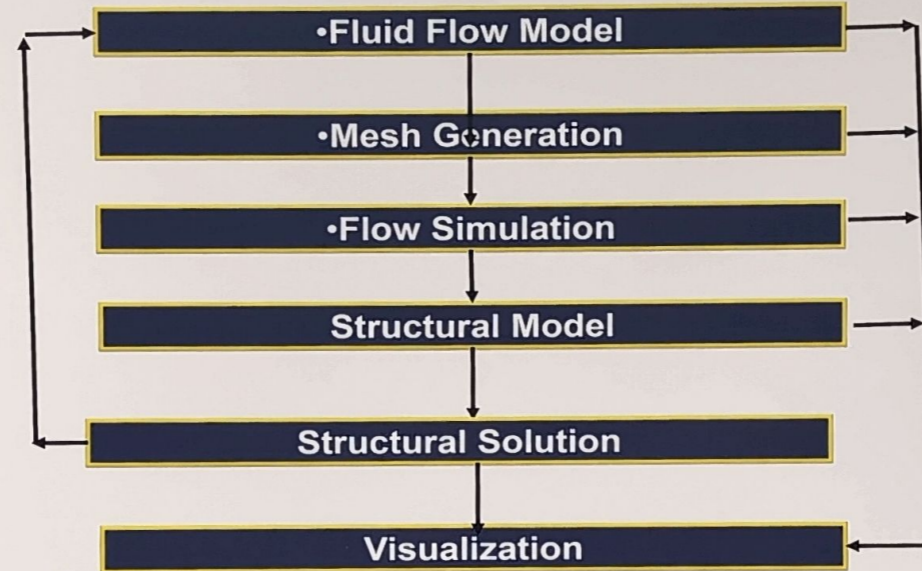
Dual Degree Engineering Dept.

DESIGN

Fluid Flow Model Formulation
- Assumptions
  - Inviscid
- Incompressible
- Steady State

APPROACH

- Fluid Flow Model
- Mesh Generation
- Flow Simulation
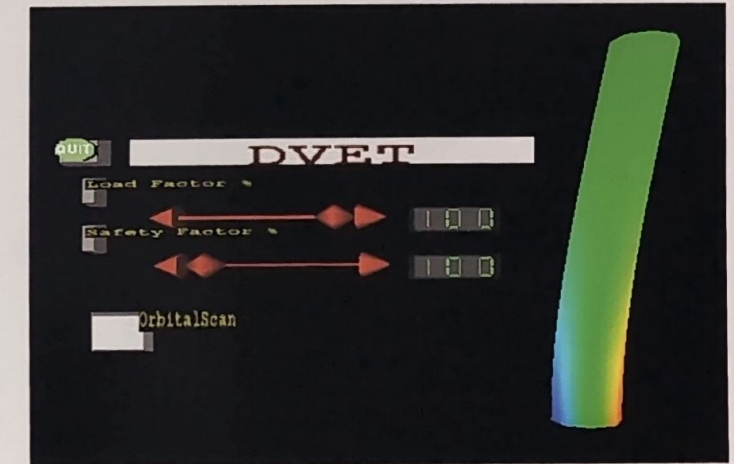- Structural Model
- Structural Solution
- Visualization

DESIGN SOLUTION

Bending Stresses & Displacement in Virtual Environment

RESULTS

Pressure Distribution (Side View)

Pressure Distribution (Around Surface of Cylinder)

Fluid Flow Around Cylinder (Top View)

Velocity Vector Field (Side View)

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