MAE 263F
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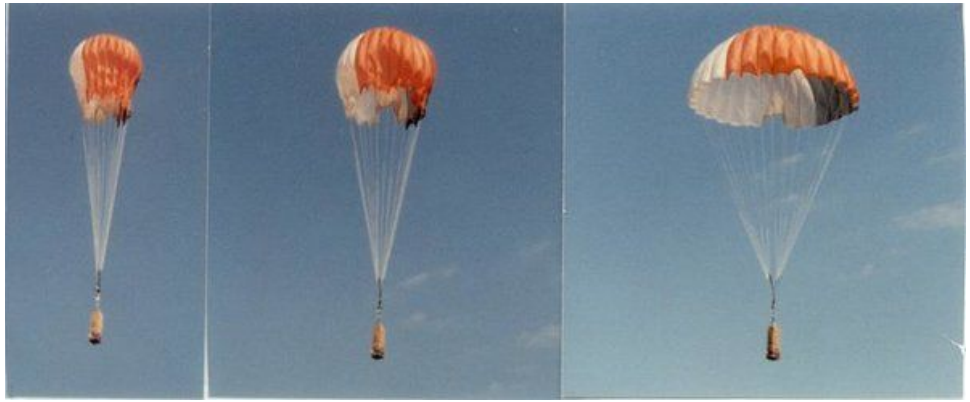
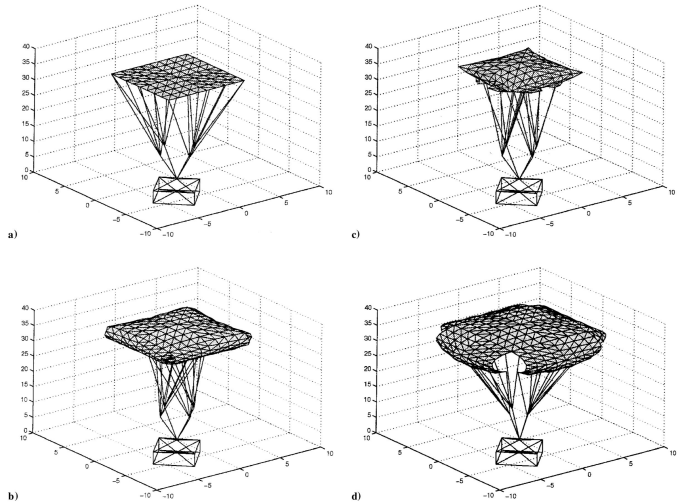
Flexible Structure of Parachutes in Flight

Idea: Flexible Structure of Parachutes in Flight

- Project Motivation
  - To understand the basic mechanisms of parachute in flight
  - Terminal velocity under different flow conditions





Simulation Implementation Proposal

- Discretization of Structure
  - Parachute sheet is discretized as a shell
- Discretization of Forces
  - Tensile forces towards payload along the edges
  - Drag force acting outward on all elements of the shell
  - Steady state flight = fixed amount of drag force distributed over the shell
- Boundary Conditions:
  - Simple Implementation: Rolling condition in X-Z plane and fixed Y points at the load strap connections

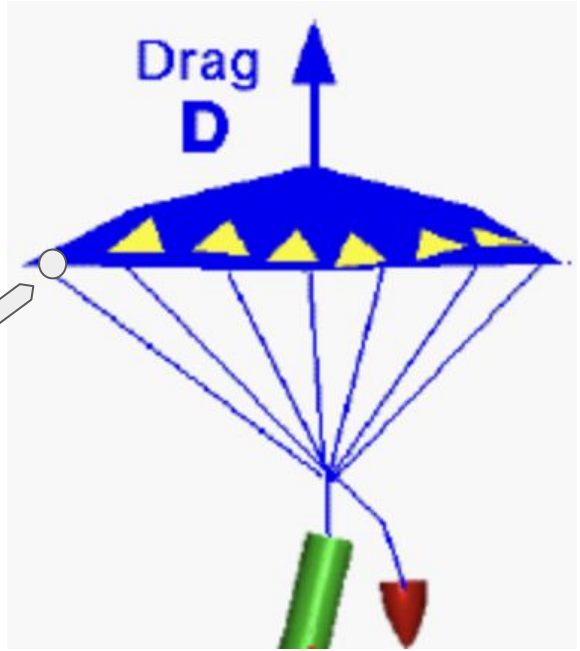


Image source: NASA Glenn