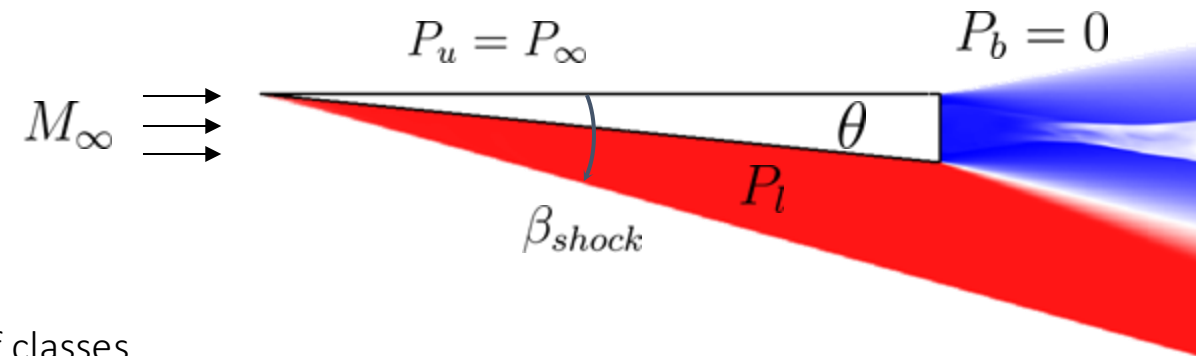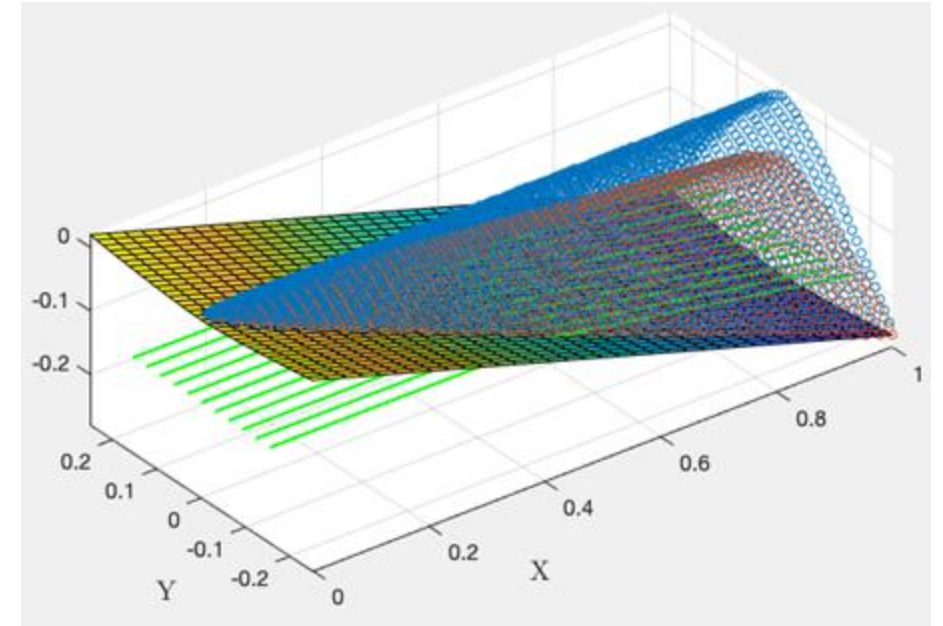# Class Project:
Hypersonic "Waverider" Design Project

- **Design a hypersonic waverider**
  - Released at 40km with Mach 10
  - Length: L = 1m
  - Volume constraint: V = 0.01m^3 & ρ = 2500 kg/m^3
  - You can assume inviscid flow, perfect gas (neglect high temperature effects effects), assume standard atmosphere model, etc.

- **Task**
  - *Optimized vehicle shape to reach the maximum distance.*
  - *Calculate trajectory and maximum distance.*

- **Design process**
  - Use CFD and/or analytical approach.

- **Deliverables**
  - 1 report describing the design and analysis are due at the last day of classes (limited to 15 pages) and a final presentation (15mins and 5mins Q&A)

Class Project:
Hypersonic "Waverider" Design Project

30 km boost-glide trajectory assuming authority over AOA

Drag

Lift