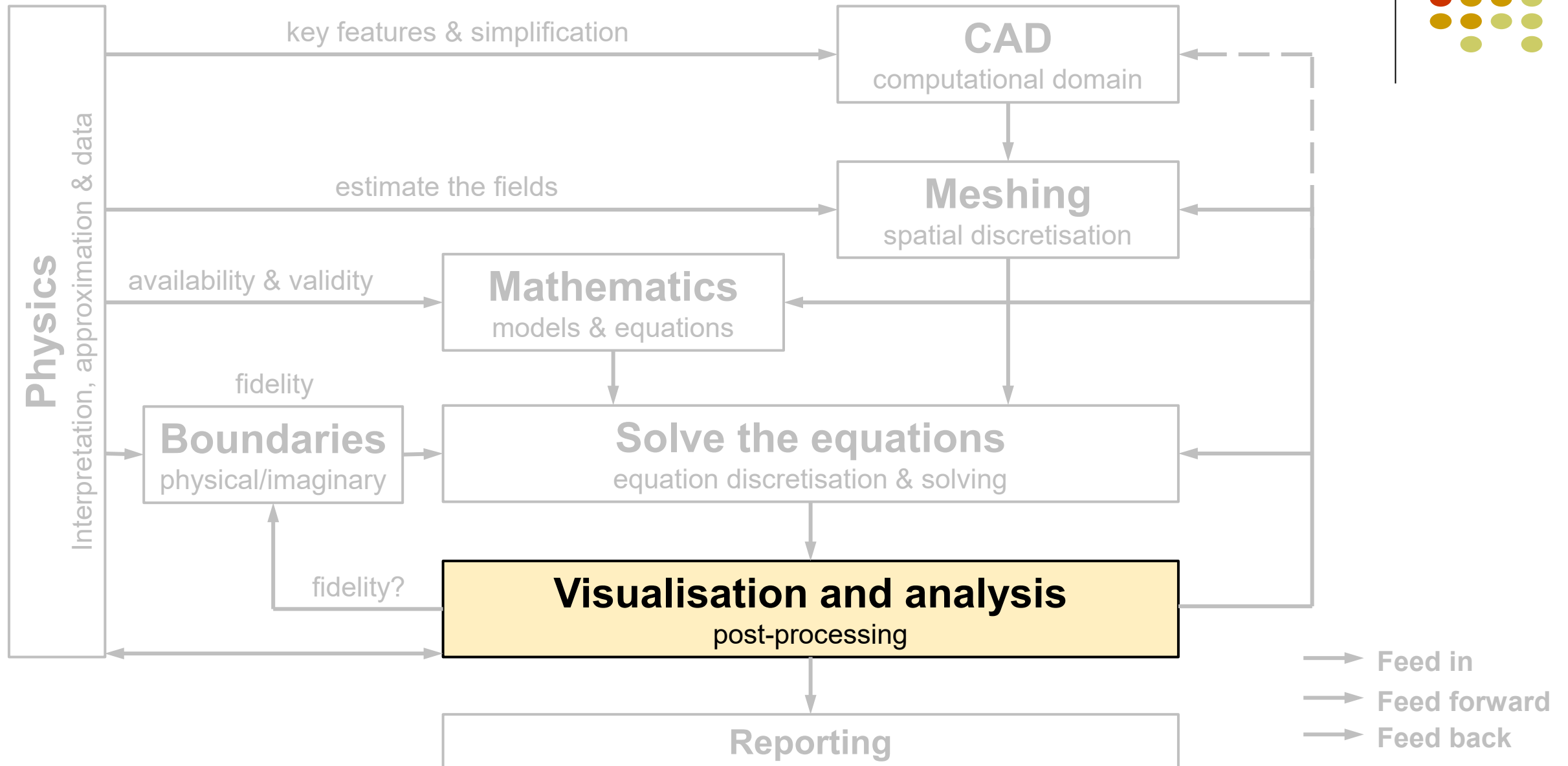
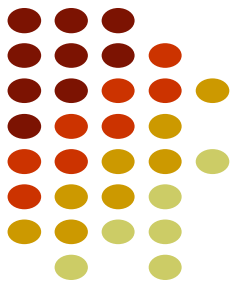
The background of the slide features a 3D model of a fighter jet, likely an F-16, shown from a side-on perspective. The aircraft is rendered in a semi-transparent cyan color, revealing internal components like the engine and fuel tanks. Overlaid on the aircraft is a complex computational fluid dynamics (CFD) simulation. A dense field of small arrows represents the flow field around the aircraft, showing the direction and magnitude of the airflow. Additionally, there are large, semi-transparent red and yellow regions on the wings and fuselage, which likely represent areas of high pressure or temperature. The overall image is set against a light gray background with a subtle grid pattern.

# **ENGINEERING COMPUTATIONAL FLUID DYNAMICS (ECFD)**

**Dr Xiangdong Li**  
**Module 8 – Post-processing**

# CFD workflow



# This module

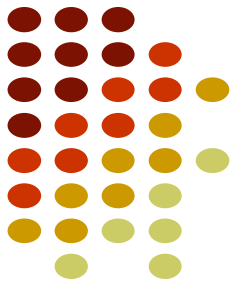
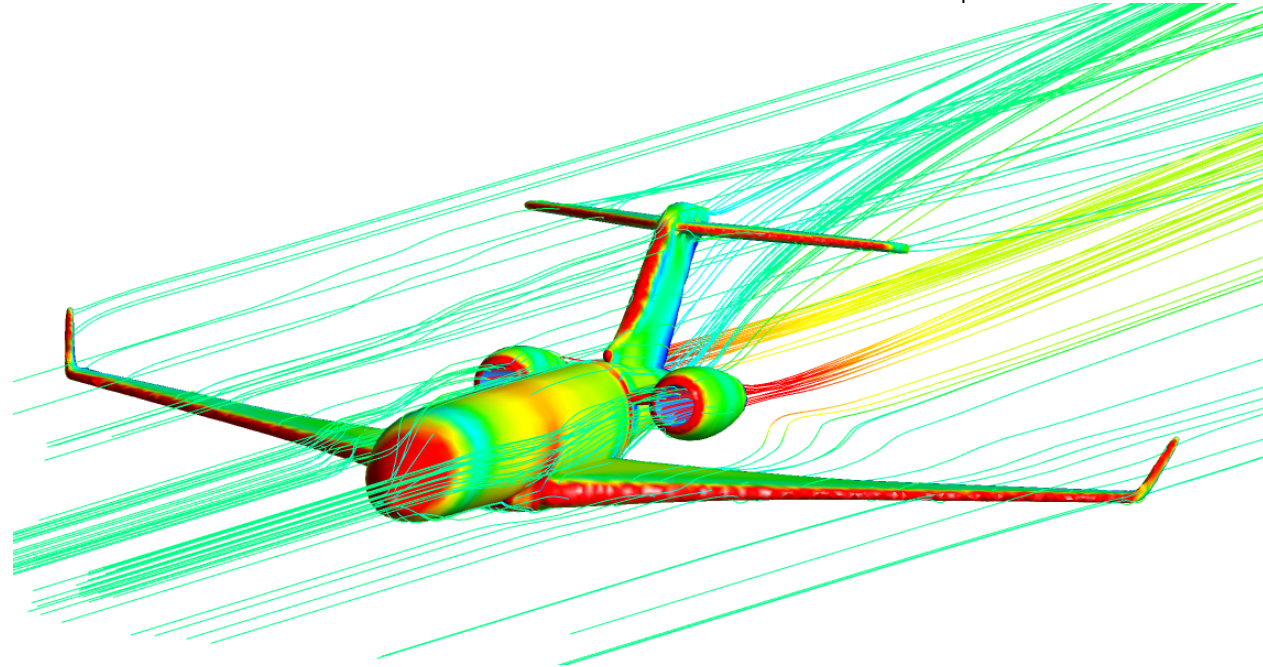


- ❖ Manipulate CFD results using CFD-Post
- ❖ Visualise and analyse the flow field
- ❖ Plot data using 1D, 2D, 3D and time-dependent methods
- ❖ Calculate critical data
- ❖ Export data or further analysis

# Why post-processing?

- ❖ Visualise the results
- ❖ Analyse the results
- ❖ Demonstration and presentation

The quality of CFD simulation is largely determined by post-processing

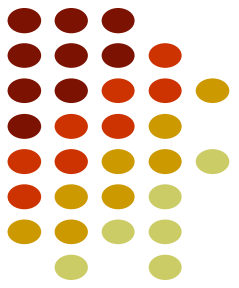


# Post-processing tools



- ❖ **CFD-Post**
- ❖ Fluent post-processing module
- ❖ Tecplot
- ❖ Many more ...

# Graphics and alphanumeric



Results can be viewed in

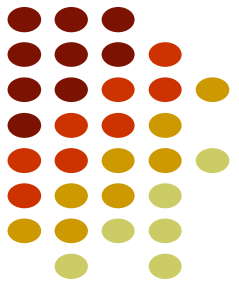
## ❖ Graphics

- Domain rendering
- Plot data in 1D/2D/3D domains
- Plot time-related changes
- Visualise the fields
- Generate figures
- Generate animations
- Export data
- ...

## ❖ Alphanumeric

- Find max/min values
- Calculate force, average, mass flow rate, volume, surface, ....
- ...

# Today's topics



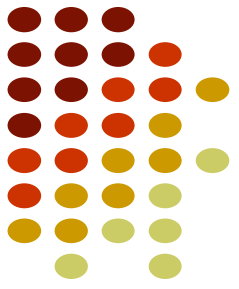
## Plots

- ❖ 1D plots
  - X-Y plots
- ❖ 2D plots
  - Surface rendering
  - Contours
  - Vector plots
  - Oilflow lines
- ❖ 3D plots
  - Volume rendering
  - Iso-surface
  - Vector plots
  - Streamlines

**Data export**

**Calculators**

**Animation**



**LET'S DO IT**