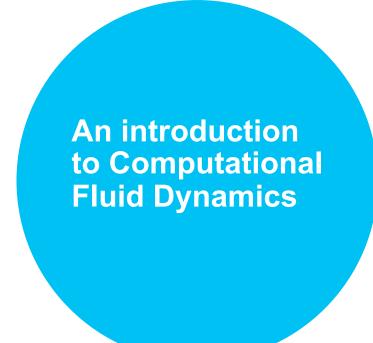
## **CFD 100 Series**

Lecture 00:

A brief course overview



### 0.1

## Overview Motivation

- CFD 100 Series: An Introduction to Computational Fluid Dynamics
- CFD 200 Series: Intermediate Concepts in Computational Fluid Dynamics
- CFD 300 Series: Advanced Computational Fluid Dynamics
- •
- Motivation:
  - 助己, 梳理脉络、整理知识
  - 助人,降低门槛、高效学习

CFD 100 Series 6/16/24 2

## 0.1

# Overview Scope

- Governing Equations
- Finite Difference Method & Finite Volume Method
  - diffusion eq., advection eq., advection-diffusion eq., Poisson eq., stability analysis,
    linear solver...
- python programming (jupyter notebook)

CFD 100 Series 6/16/24 3

#### 0.1

## Overview References

- Professor Tony Saad
- 我所理解的流体力学
- An Introduction to Computational Fluid Dynamics: The Finite Volume Method
- Numerical Heat Transfer and Fluid Flow
- 计算流体力学及其应用
- 数值传热学
- Numerical Methods for Partial Difference Equations Finite Difference and Finite Volume Methods
- The Finite Volume Method in Computational Fluid Dynamics: An Advanced Introduction with OpenFOAM and Matlab
- Computational Methods for Fluid Dynamics
- Notes on Continuum Mechanics
- Fluid Dynamics 101

CFD 100 Series 6/16/24