

# Vortex shedding - 2D Cylinder

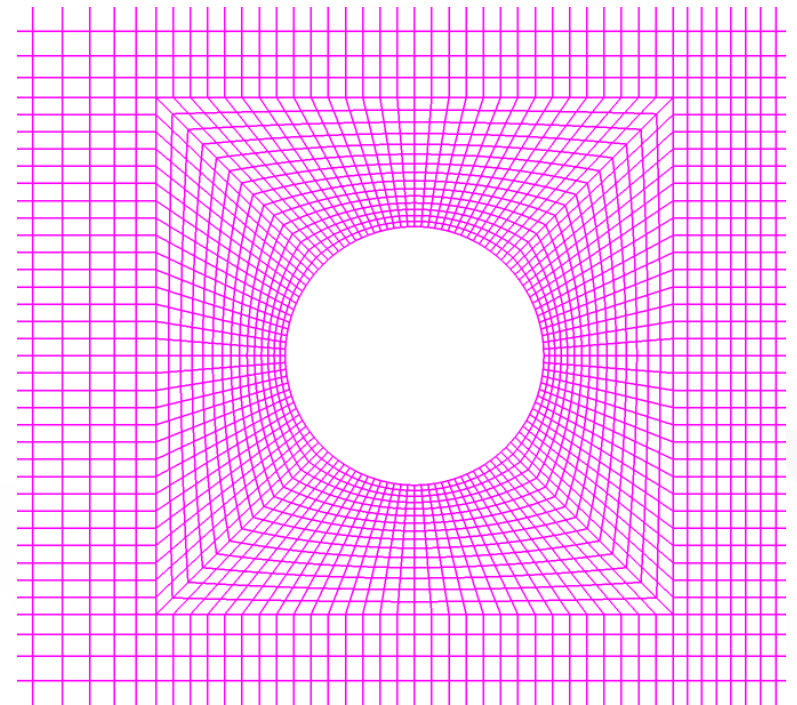
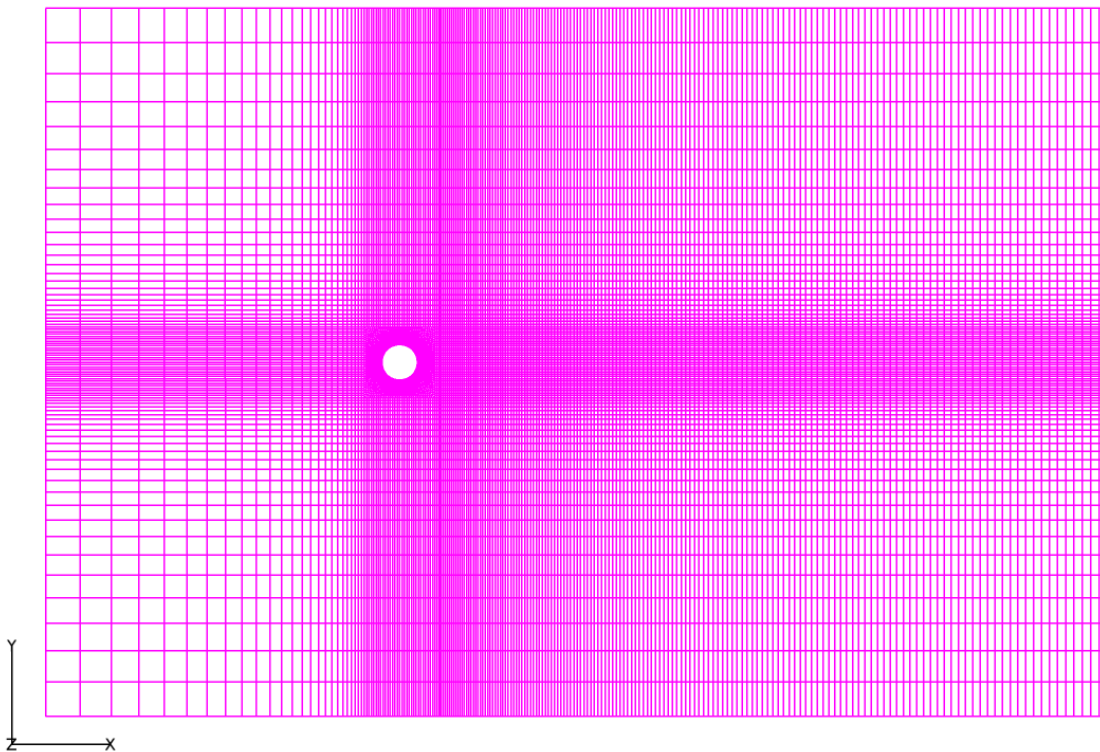
2014. 06

김 병 윤

# 개요 - 형상 & 격자

## ▶ 2D cylinder

- Cylinder Dia. = 1.0
- Domain size : (-10,-10,0) ( 20,10,0)
- 17,300 cells



# 개요 - 계산 방법

## ▶ 계산 조건

- $Re = 100$  : Density=1,  $U=1$ , viscosity=0.005

## ▶ Solver

- pimpleFoam of OpenFOAM-2.3.0

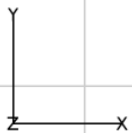
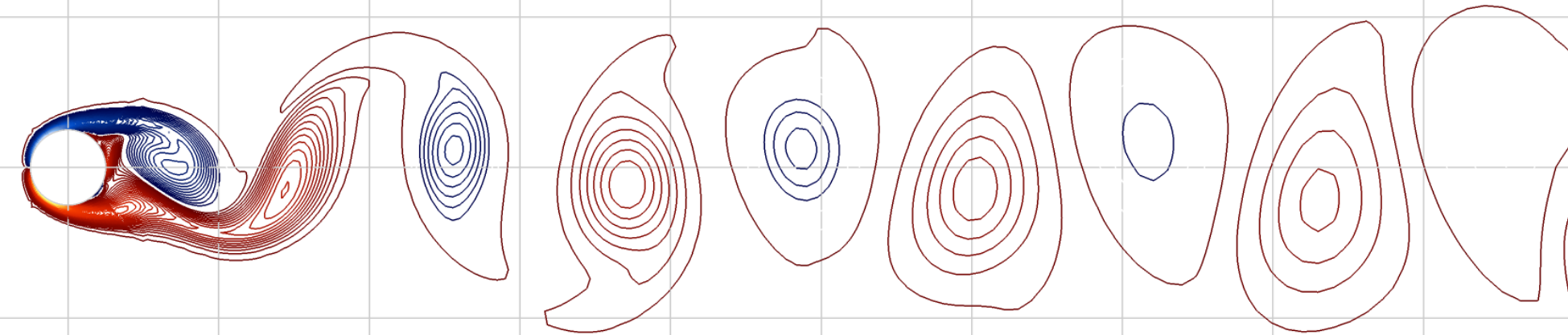
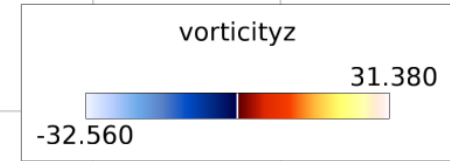
## ▶ 경계조건

- 속도
  - Fixed value at inlet
  - Zero gradient at outlet
  - symmetry at farfield
  - No-slip at cylinder
- 압력
  - Fixed Value at outlet
  - Zero gradient at inlet and cylinder

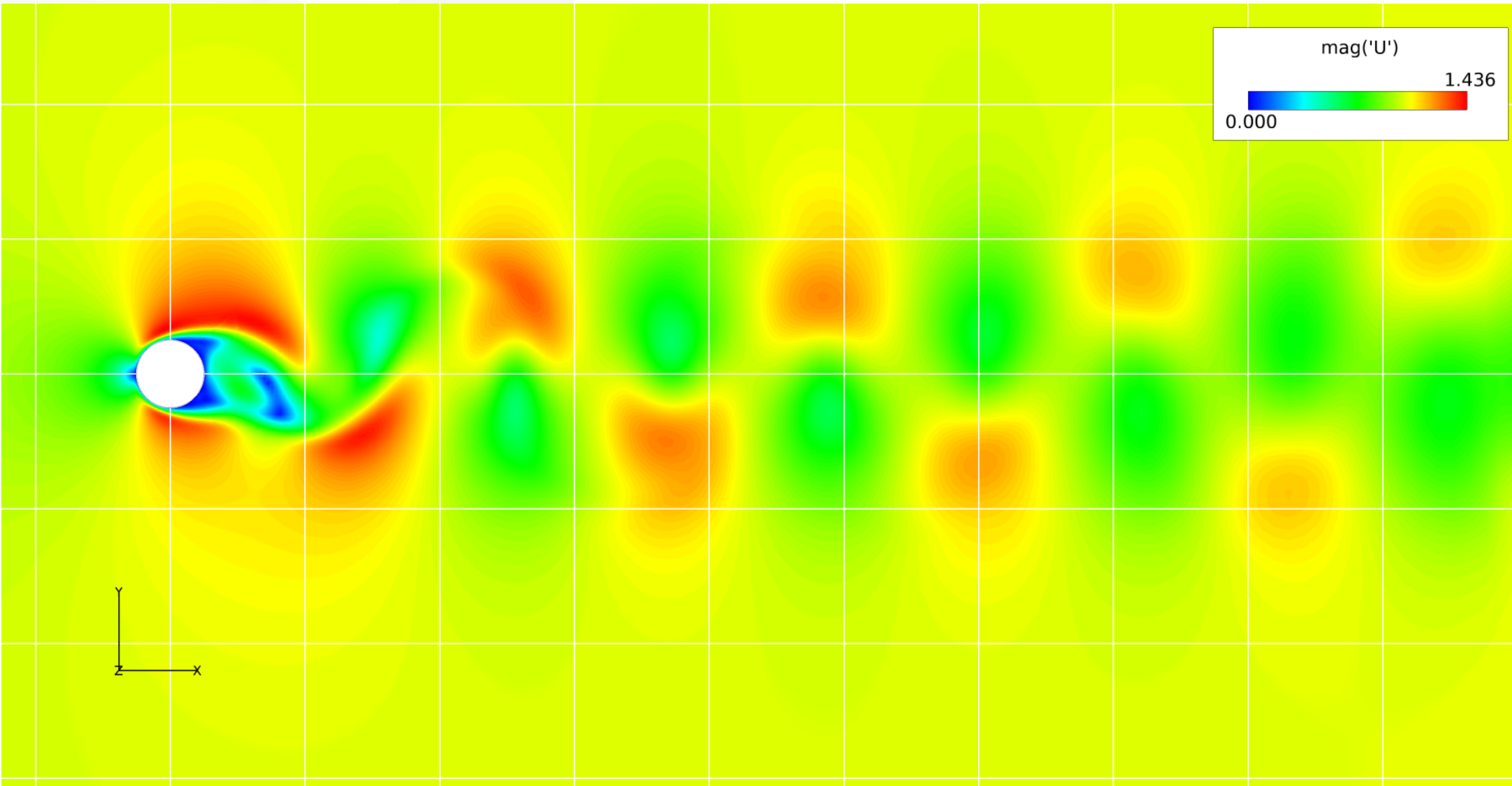
## ▶ 2nd order discretization

## ▶ Time step size : 0.01

# 결과 - vorticity



# 결과 - velocity magnitude



## 결과 - $U_y$ at (2,0,0)

▶ Strouhal number,  $St=0.193$

