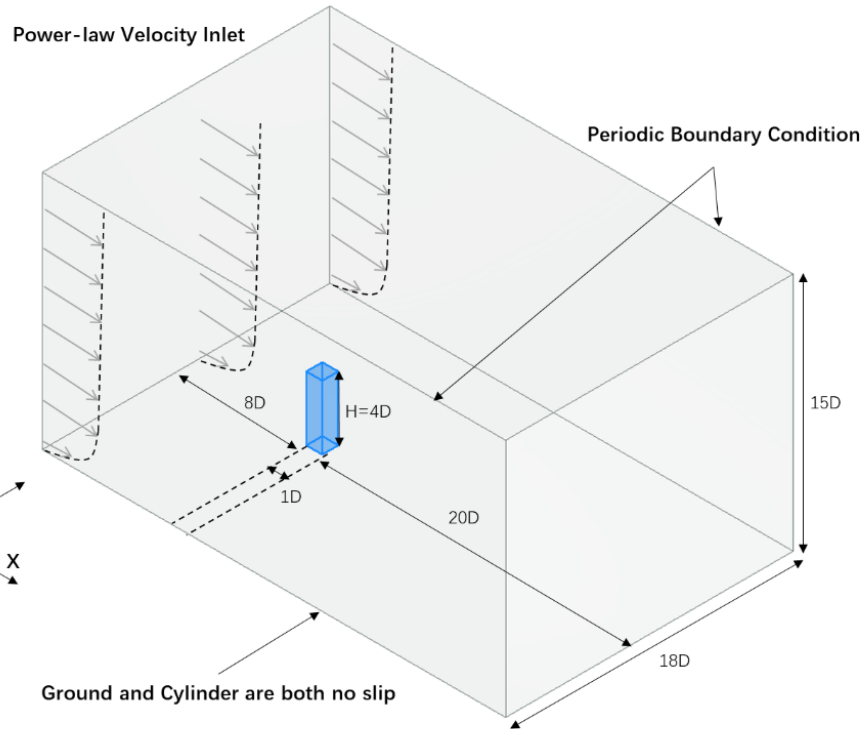


# Numerical computation of a turbulent wind flow over buildings and estimation of its effect on drones model

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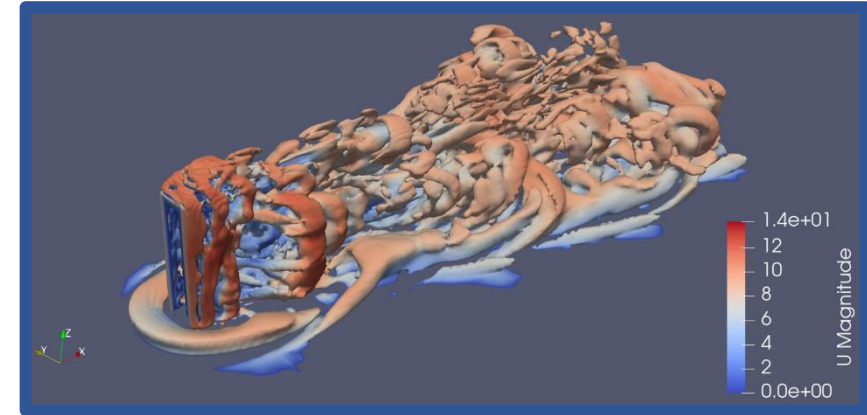
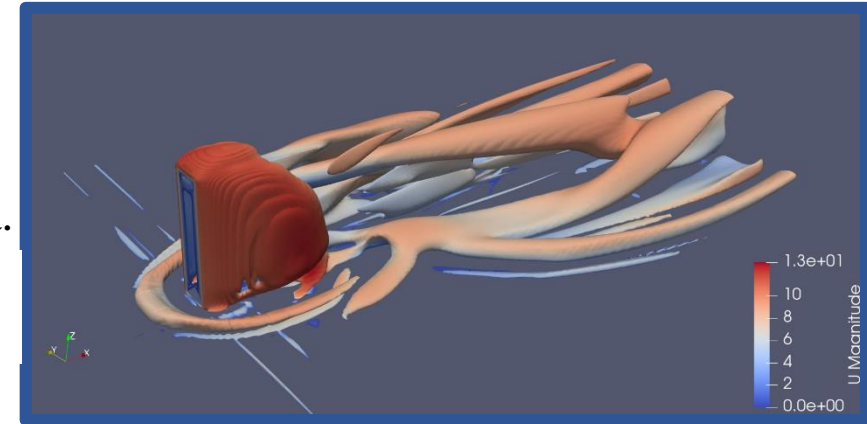
Reynolds number: 12,000

Strouhal number: 0.104

The Q-criterion provides insight into the vorticity-dominated area.

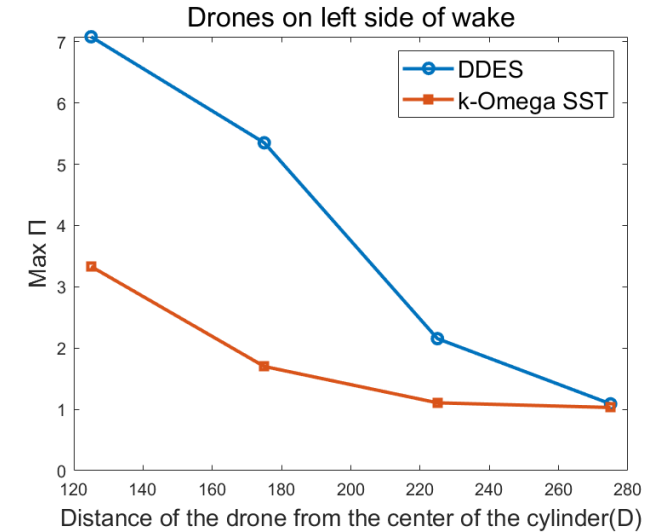
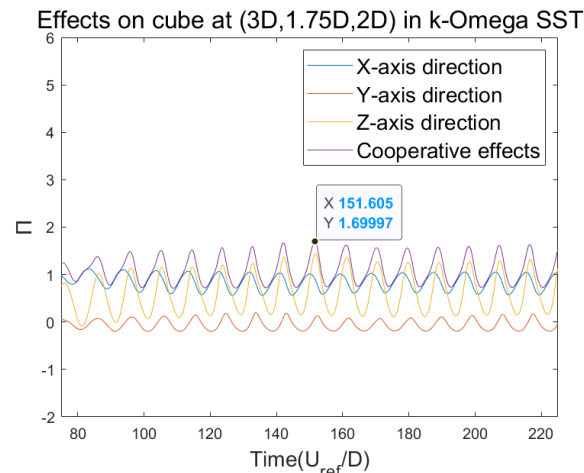
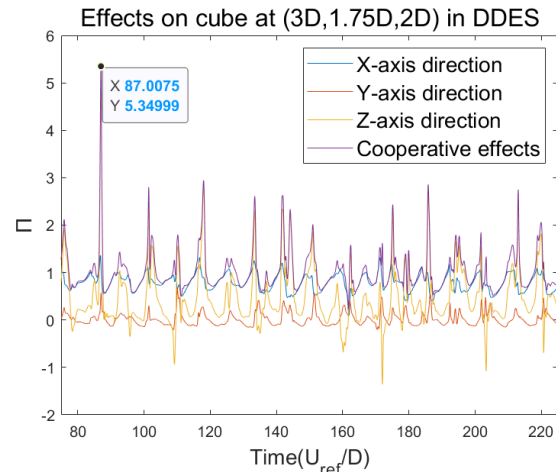
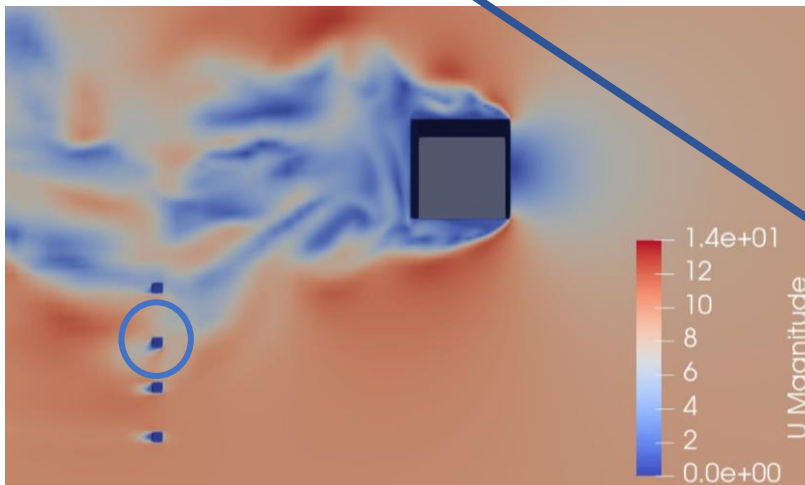
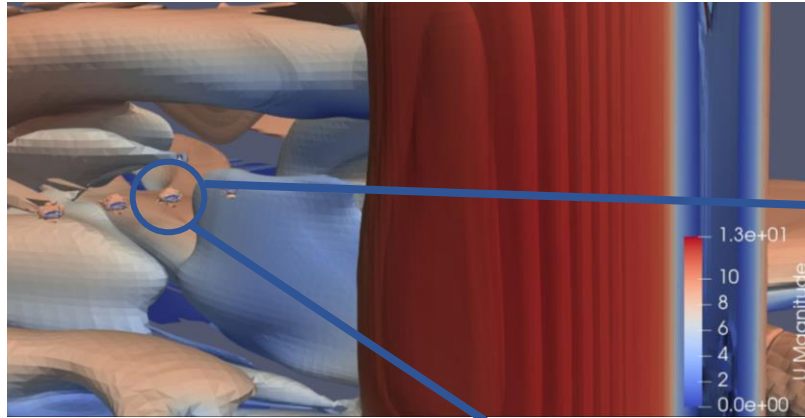
$$Q = \frac{1}{2} \left[ (\text{tr}(\nabla u))^2 - \text{tr}(\nabla u \cdot \nabla u) \right]$$

SA-DDES&k-Omega SST



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$\Pi$  is total force on the drone, define as :

$$\Pi = \frac{2 \cdot (F_p + F_v)}{\rho V_m^2 A}$$