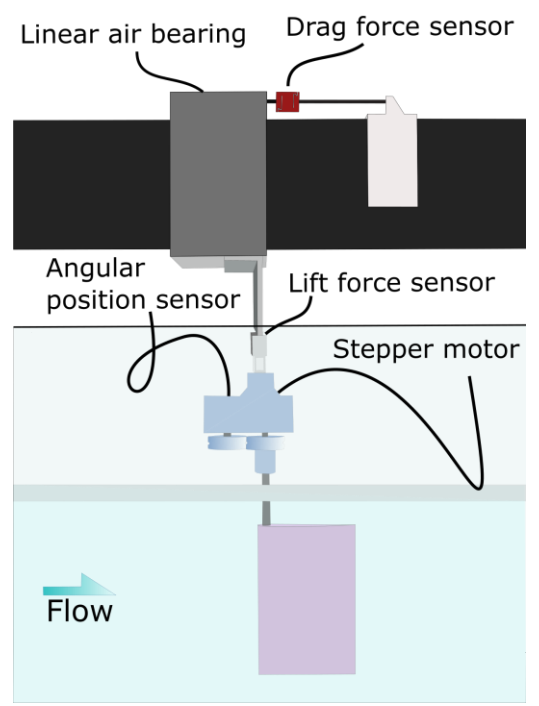


About the unsteady propulsion of an airfoil

Gauthier Bertrand*, Ramiro Godoy-Diana, Benjamin Thiria, Marc Fermigier,
Laboratoire de Physique et Mécanique des Milieux Hétérogènes (PMMH)
ESPCI-PSL, CNRS, Sorbonne Université, Université Paris-Cité



Effect of the mean incidence angle for the foil on the aerodynamic coefficients.



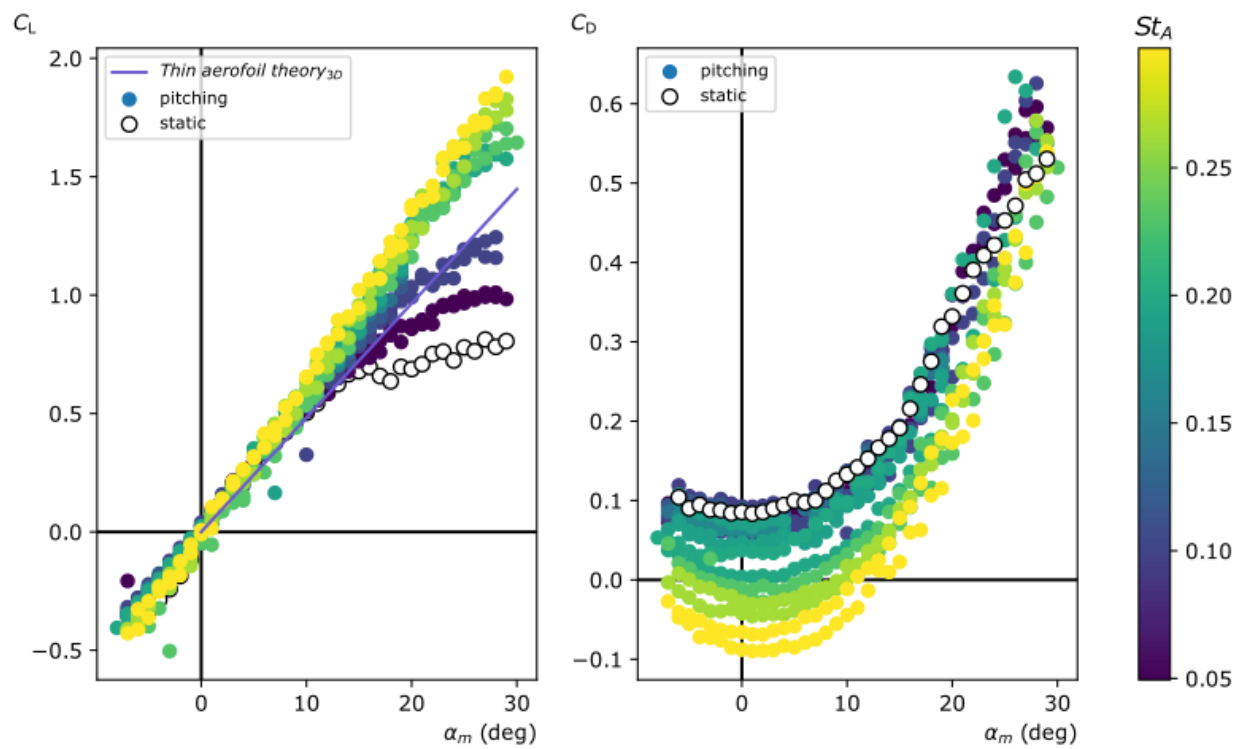
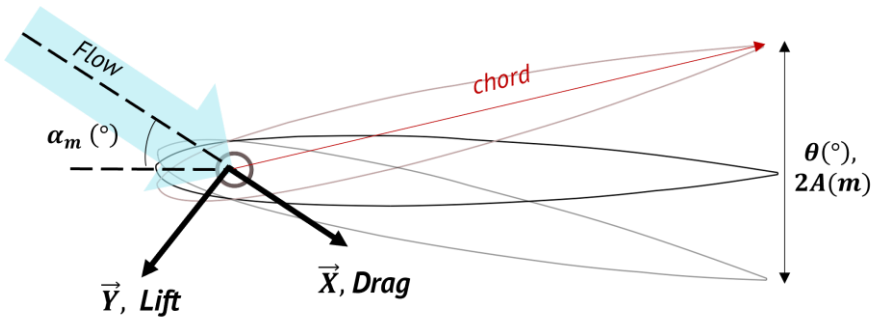
Reynolds Number,

$$Re = \frac{U_\infty c}{\nu_{water}} = 14400$$

Strouhal number,

$$St_A = \frac{2Af}{U_\infty}$$

$$C_{Lift} = \frac{2\bar{F}_y}{\rho S U_\infty^2} \quad C_{Drag} = \frac{2\bar{F}_x}{\rho S U_\infty^2}$$



**What is a good pitching movement?
 What about the boat propulsion ?**

Sketches of the experimental set-up in a watertank.