



Propeller & Wing

Propellers propellant

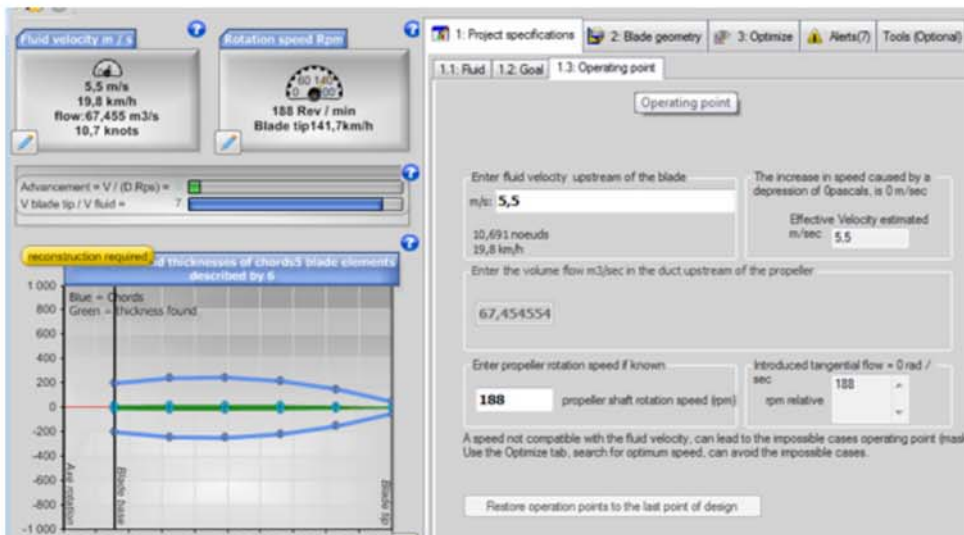
capture energy turbines

Software turbine propellers wings

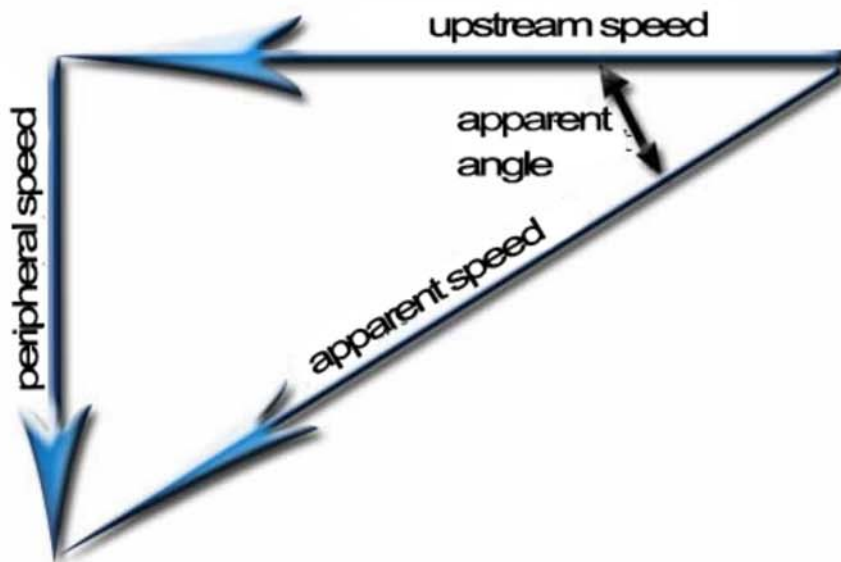
Index

Operating point of a propeller blade propeller twist

This is on the tab **2.1: Operating point of the propeller**, that you enter the operating data. Fluid velocity (or from the vehicle) and the desired rotational speed (if known).



The fluid velocity, and the rotational speed produces an apparent velocity, and an apparent angle, which vary according to the observed position along the blade of the propeller.



apparent angle thus varies with the rotational speed, and the fluid velocity. **The speed of rotation and the speed of fluid produce the operating point of our propeller..**

The peripheral speed in m / sec at a point on the blade, is equal to the perimeter of the circle on which the point is observed multiplied by the number of revolutions / second. If you look at the blade by Elements, we find that for a same rotation speed (rev / sec), the linear velocity (m / seconds) of an element at the blade tip, is much higher than the speed of a portion close to the axis. The blade sections are generally shaped airfoils. The blade sections are profiles, and the portion between two profiles, are the elements of the blade.

Modeling aerial propeller in heliciel



Modeling boat marine propeller in heliciel



Modelisation helice ventilation dans heliciel



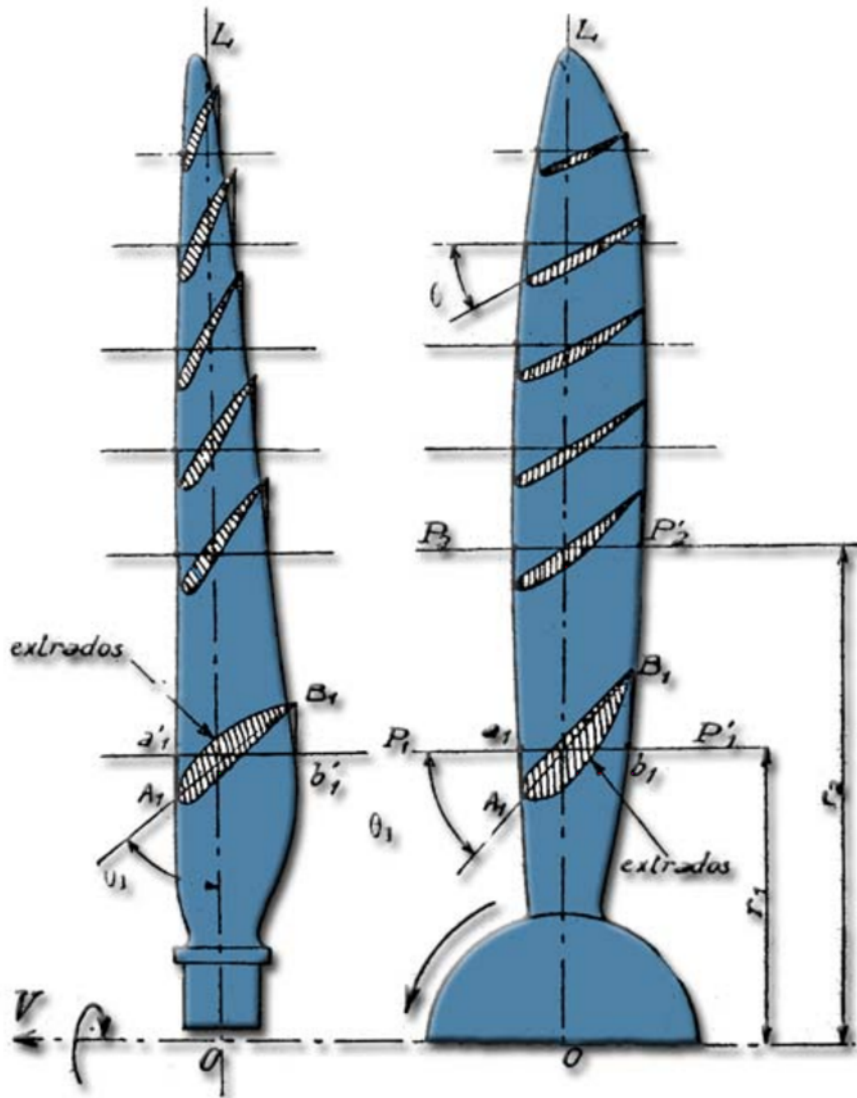
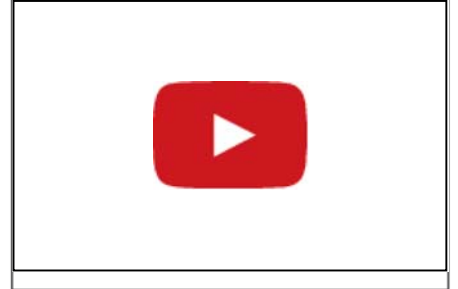
Modeling propeller ventilation in heliciel



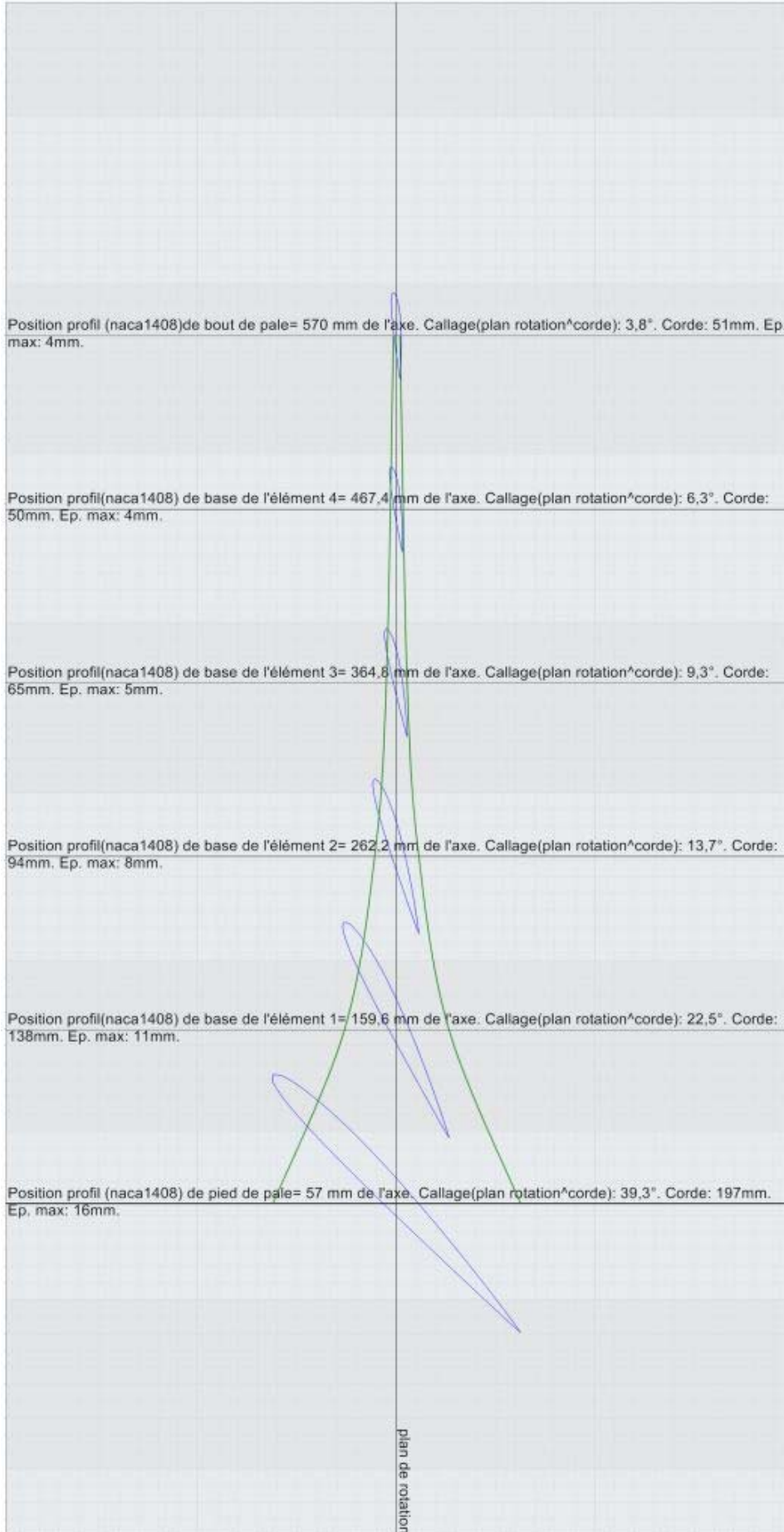
tidal turbine modeling in heliciel



Kaplan propeller modeling in heliciel



The speed in m / sec of a blade tip profile is different from the profiles close to the axis. Compound flow varies in angle and speed according to the distance from the axis of the propeller. In order for the angle of incidence profiles always correspond to the optimum, it is necessary to vary the pitch (angle between the plane of rotation and the chord) du profile with the direction of the relative flow. This is the twisting of the blade.



- Operating point of the propeller is determined by the rotational speed and the fluid velocity. The operating point therefore also determines the twist of the blade. A blade is twisted to have optimum angles for some operating point. If the operating point varies (rotational speed or fluid velocity), then the twisting of the blade is no longer optimum. In this case, the propeller operates outside of its design point, in the off-design mode..See:

- Re build the optimum twist:



[Calculate off design performance.](#)



[websites Mecaflux & Heliciel](#)

[Tutorials](#)

[Softwares](#)

[Client Area](#)

[Contact](#)

[Cart](#)



[Products](#) | [Store](#) | [My Mecaflux](#) | [My Licences](#) | [Key generator](#) | [My cart](#) | [Contact](#)

Copyright © 2015 Mecaflux. All rights reserved.

[Terms of sale](#) | [Privacy and cookies](#)