RotorFF

Syntax

[Vt,wt,Vp,wp,Pt,Tp] = RotorFF(alfa)

Description

[Vt,wt,Vp,wp,Pt,Tp] = RotorFF(alfa) returns the characteristic curves for rotor in forward flight for both constant thrust and power and gives in output also the relative x and y values. It requires in input the angle of attack in degrees.
The plot avaiable are:
- For constant Thrust:
  -w versus V
  -P versus V
- For constant Power:
  -w versus V
  -T versus V
where w = induction, V = asymptotic velocity, T = Thrust, P = Power

Examples

Input Arguments

Alfa – angle of attack

Output Arguments

Constant Thrust

Vt – asymptotic velocity
wt – induction
Pt– power

Constant Power

Vp – asymptotic velocity
wp– induction
Tt– power

All the values are non-dimensional in respect to their value in hovering (for V is used induction in hovering).

Reference

R. Tognaccini. "Lezioni di aerodinamica dell'ala rotante" *2019* pp. 84-85.