1. **The trust generated depends on how close the drones are to each other.**

Uma imagem com texto, relógio

Descrição gerada automaticamente

Being:

* R – thrust ( no meu caso, u(1)) ;
* z – distance to the horizontal platform
* Tinf – thrust produced with the same power outside the ground effect

+ (add some constant to determine how much of this effect is considered, since the drone is not a horizontal surface , but can be considered at some point a percentage of it)?

**1) Calculate the induced velocity from the drone above**

(equation for V = 0, missing forward flight condition)

Vi = 

Being:

* T – thrust (u(1));
* Ro – air density
* A – area swept by the rotor

**2) Calculate the air relative velocity from that drone**



Being:

* **Vw = Wrb\* ws** – wind velocity felt on the drone’s body (Wrb – rotation matrix, ws is the wind speed: [wsx wsy wsz]);
* **V** – drone’s body speed
* **Vi** – additional velocity imparted by the rotor, which we call induced speed

(considering that the airflow from the drone beneath is to weak to take in consideration)

**3) Calculate the frame drag of the drone above**

Uma imagem com texto

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Being:

* Cd the drag coefficient,
* ρ the air density
* A is the platform’s projected area in  
  the corresponding plane

**4) calculate the induced velocity from the drone flying beneath**

**Vi =** 

**5) The drone flying beneath at some point feels the downwash from the other as it gets near to it. To quantify that amount of air flow coming from the drone above, a gaussian function is used.**

Vair = V - Vi - Vw – (Vdownwash\* Fgaussian)

Being:

* Vdownwash = Vi \* Wrb (Vi of the drone flying above!)

5) Calculate de frame drag from the drone beneath

Uma imagem com texto

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