In the scope of this paper we are strictly working on the static propeller tests. This allows us to fully define and measure how the motor-rotor system will respond to any external stimuli. To start characterizing the propeller output we have to define the three different velocities that we are measuring.

$v_x$ , $v_y$ , $v_z$ Is the velocity of the drone, the body frame velocity. $v_x^s$ , $v_y^s$ , $v_z^s$ is the velocity of the wind approaching the propellers, the stream velocity. $v_x^i$ , $v_y^i$ , $v_z^i$ is the induced velocity of the propellers. Since we are doing only the static tests,horizontal wind can be considered irrelevant, therefore $v_s = v_z^s$ and $v_i = v_z^i$. What the wind sensor will notice is $v_{tot} = v_i + v_s$. In real life settings we could calculate $v_s$ based on the data from the MAV's IMU. Since this is not the case, we can instead set a particular voltage as the desired voltage, $v_d$. This desired voltage is ideally the voltage the wind sensor measures when there are no external forces.