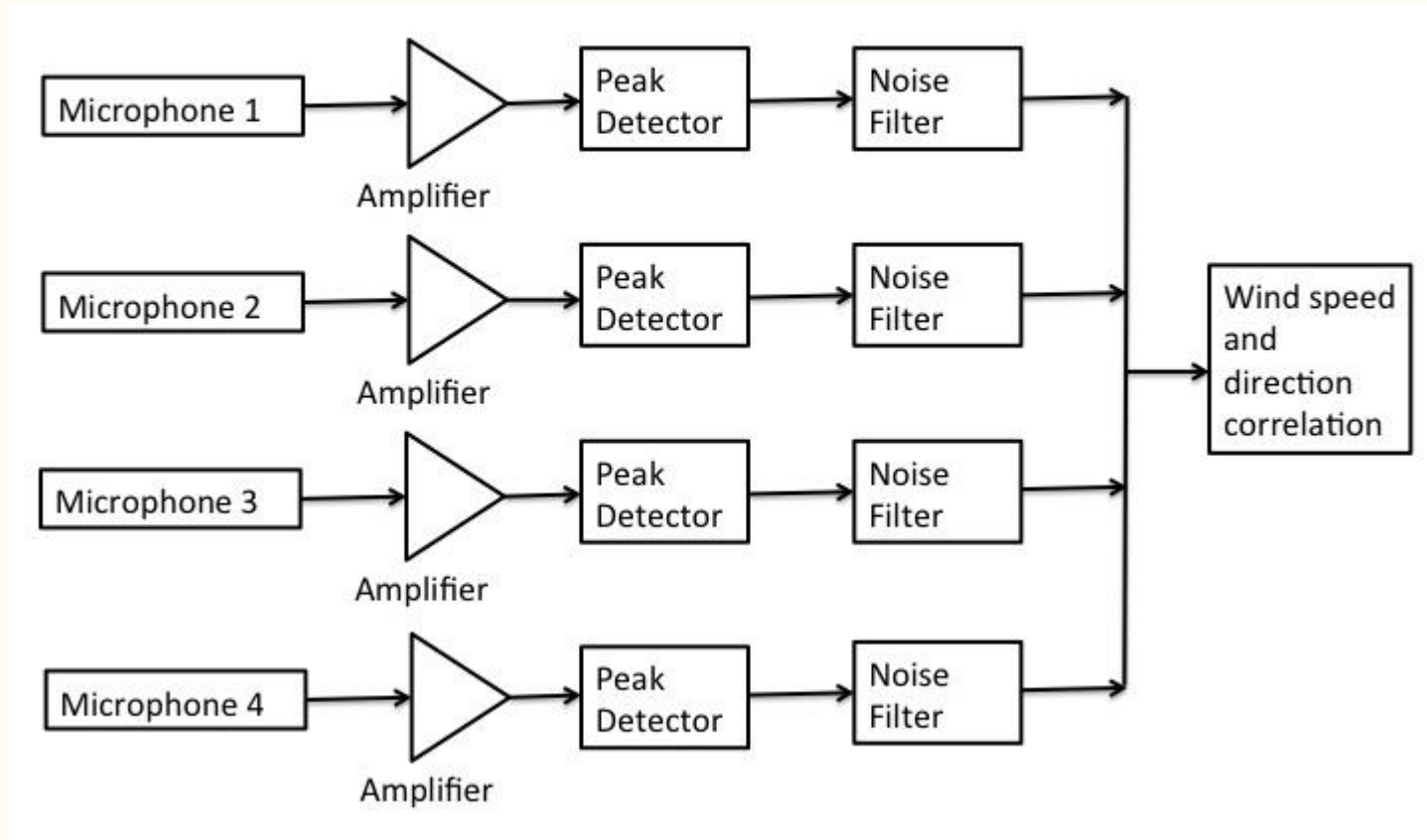


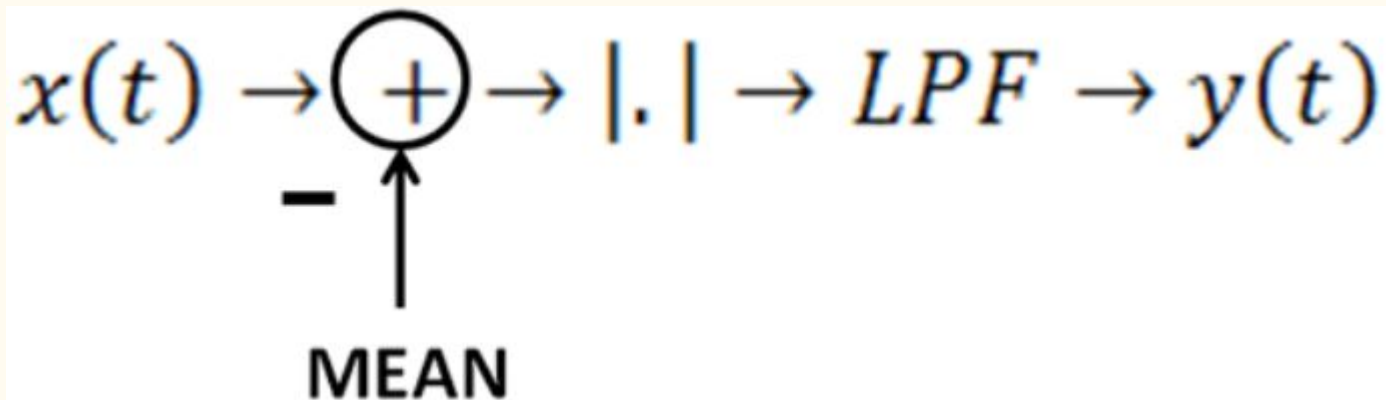
Wind Sensor Preliminary Design Review

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Block Diagram



Wind Speed



Direction

if $Y, X > 0$ then quadrant 1;
if $Y > 0, X < 0$ then quadrant 2;
if $Y, X < 0$ then quadrant 3;
if $X > 0, Y < 0$ then quadrant 4.

$$\theta = \text{arctan}\left(\frac{Y}{X}\right), \quad Y = |\text{Mic}_B - \text{Mic}_D|, \quad X = |\text{Mic}_A - \text{Mic}_C|$$

Progress

- Have a new set-up for testing
 - It can rotate 360 degrees
- Worked on testing
 - Consistency testing
 - Testing effects of possible housing
 - Testing angles



Progress and Results

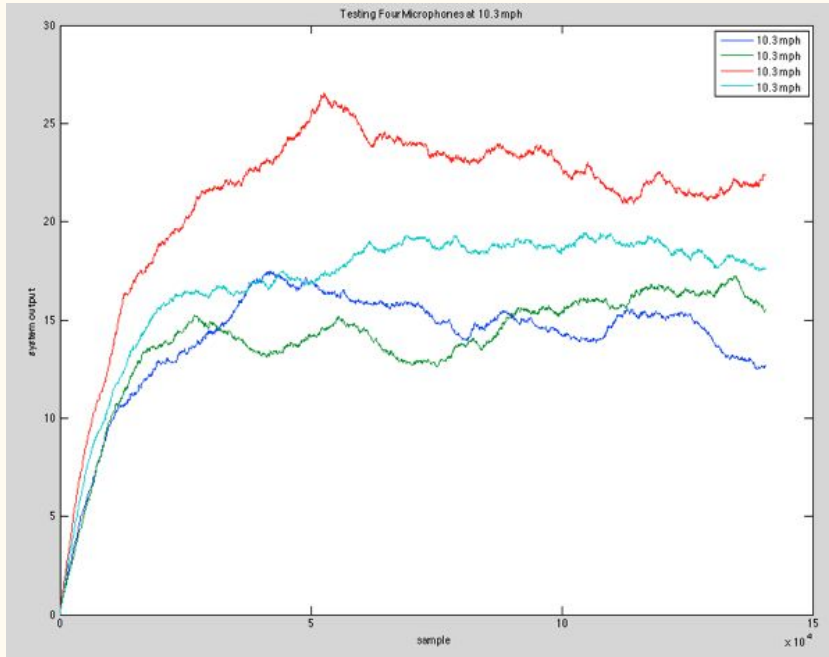


Fig 1. Consistency Testing Results

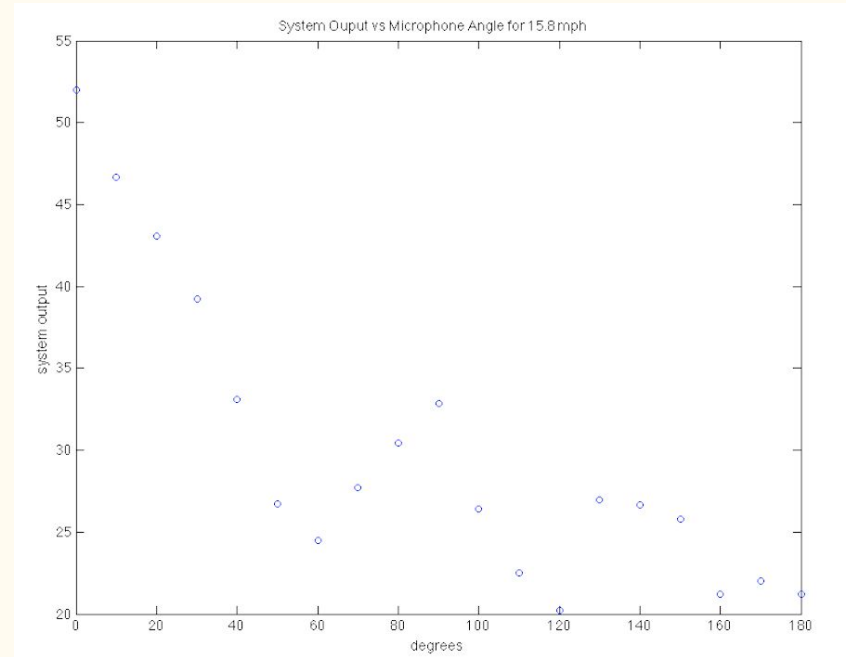


Fig 2. Angle Testing Results

Problems and Issues

- Need a new fan
 - Current fan makes too much noise
- Not able to get real time data from digital anemometer



Goals

- Come up with a model for the effect of angle of microphones
 - From this model, create a 2D wind sensor
- Filter out noise
- Come up with a design for housing
 - Get slits to work to control frequency

Questions?