Final expressions for Tiger 700 motor and 11*3.7 CF propeller with 14.8 V

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The following is from experimental data:

$$Throttle = p_1 T^2 + p_2 * T + p_3 \tag{1}$$

Coefficients (with 95% confidence bounds): (2)

$$p_1 = -1.784(-2.176, -1.392) \tag{3}$$

$$p_2 = 38.45(34.62, 42.28) \tag{4}$$

$$p_3 = 6.359(-0.6873, 13.4) \tag{5}$$

$$\tau = p_1 T + p_2 \tag{6}$$

Coefficients (with 95% confidence bounds): (7)

$$p_1 = 0.01351(0.01283, 0.01419) \tag{8}$$

$$p_2 = 0.006128(0.002816, 0.009441) \tag{9}$$

(10)

The following is from motor manual:

$$\tau = p_1 T + p_2 \tag{11}$$

Coefficients (with 95% confidence bounds): (12)

$$p_1 = 0.01719(0.01498, 0.0194) \tag{13}$$

$$p_2 = 0.005421(-0.01431, 0.02515) \tag{14}$$

(15)

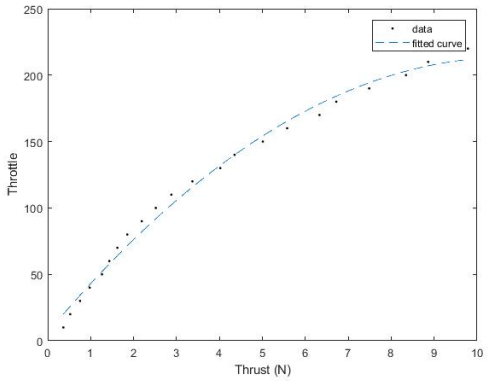

Figure 1: Throttle vs thrust (N)

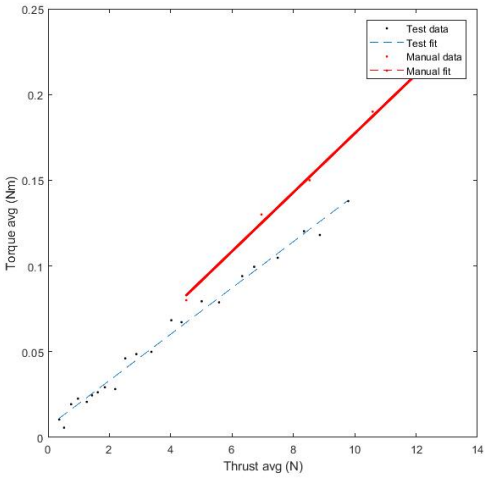

Figure 2: Torque (Nm) vs thrust (N)