**Appendix**

**Matlab Code**

% find the min sqaured error fit

s = 10.35;

k = [9, 9.5, 10, 10.5, 11];

p = [0.01, 0.02, 0.07, 0.28, 0.68];

sigma = [0.255, 0.2, 0.17, 0.183, 0.218];

x = s ./ k;

Ap=[ones(1,5);x;x.^2];

c = (Ap \* Ap') \ (Ap \* sigma');

c

fx = c(1) + c(2).\*x + c(3) .\* x.^2;

plot(x, fx)

hold on;

plot(x, sigma)

legend('y=f(x)','sigma')

**Output:**

c =

6.1300

-11.5837

5.6319

