% clear all; clc;

h = 1:1:130;

g = 9.81;

T = 4.5;

dh = h';

m=1;

fg =figure('Menubar', 'none', 'Name', 'Wavelength vs Period and Depth', 'NumberTitle', 'off',...

'Position' , [ 6 37 1011 697 ] , 'Color' , [ 0.87 0.87 0.87 ]);

while T ~= 17

for i=1:130

con = 1;

l(con) = 0;

l(con+1) = 1.56 \* T ^ 2;

while abs( l(con+1) - l(con) ) > 0.0001,

l(con+2) = ( ( 9.81 \* T ^ 2 ) / ( 2 \* pi ) ) \* tanh( ( 2 \* pi \* h(i) ) / l(con+1) );

con = con + 1;

end

L(i) = l(con);

k = ( 2 \* pi ) / L(i);

end

Ls{1,m} = L';

hold on

fgh =plot(dh,Ls{1,m});

xlabel('Water Depth (h), meters');

ylabel('Wave Length (L), meters');

xlim( [ 1 130 ] )

set(fgh,'Color',rand(1,3));

set(gca,'Box','on');

drt = title('Wavelength vs Period and Depth', 'HorizontalAlignment' , 'center' , 'FontWeight', 'bold');

set(gca, 'XGrid', 'off', 'XMinorTick', 'on' , 'YGrid' , 'off' , 'YMinorTick' , 'on', 'Fontsize', 8 );

m = m+1;

T = 0.5+T;

end

T= 4.5:0.5:17;

hj =length(T);

textos2 = 'T = ';

for i = 1 : hj

stringer{i,1} = num2str(T(1,i));

textos{i,1} = horzcat(textos2,stringer{i,1},' s');

end

asdk = legend(textos, 'Location', 'EastOutside');

set(asdk, 'FontSize', 6);

clc;

datacursormode on;

dcm\_obj = datacursormode(fg);

fundat = str2func('camdatos');

set(dcm\_obj, 'DisplayStyle', 'Window' , 'UpdateFcn' , fundat)

%%%%%%%%%%%% E N D M A I N F U N C T I O N %%%%%%%%%%%%%

function [txtdcm,pos] = camdatos(empt,event\_obj) %% Subfunction 1

pos = get(event\_obj,'Position');

txtdcm = {['Water Depth: ',num2str(pos(1))] , ['Wave Length: ',num2str(pos(2))]};

% End of Subfunction 1