numdata10 = xlsread('crankpressure100.xlsx');

% this for injection pressure which 100 bar plot against crank angle and cylinder pressure%

crankobserved = reshape(crankangle,7200,111);

pressureobserved = reshape(pressure,7200,111);

pressure = pressure(:);

M = max(pressure);

[maxNum, maxIndex] = max(pressureobserved(:)); %finding max pressure of each cycle

[row, col] = ind2sub(size(pressureobserved), maxIndex); %finding corresponding crankangle data of the cycle%

Maxpressure = max(pressureobserved); %finding total max pressure of all cycles%

for i= [1:111]

for j= [1:7200]

for k =[1:111]

if (pressureobserved(j,i)==Maxpressure(1,k)) %find the CA data for high max pressure of all the cycle%

m(1,k) = crankobserved(j,i);

end

end

end

end

[minNum, minIndex] = min(Maxpressure(:)); %finding minimum of max pressure of total cycle

[row1, col1] = ind2sub(size(Maxpressure), minIndex); %finding corrosponding crank angle of all cycles%

minipressurecycleplotCA = crankobserved(:,[col1]);

minipressureplotP = (:,[col1]);

x = crankobserved(:,[col]);

y = pressureobserved(:,[col]);

%new type loop instead of ifelse%

t1 = simCA; %simulated CA data

[row,column] = size(t1); %find the size of the data

[n,r] = quorem(row,sym(720)); % find the no of cycles%

for e = [1:row] % loop is for reducing the crank angle to its -360 to 360 range in simulation%

for im = [0:n+1]

if ((t1(e,1))>360+(720\*im)&&(t1(e,1))<((360+(720\*im))+720))

t1(e,1)= t1(e,1)-(720+(720\*im));

end

end

end

%end%

for e = [1:row]

y0(e,1)=10\*simpressure(e,1); %simulated pressure data is multipled by 10 for unit conversions

end

for i= row:((n+1)\*720) %equating the pressure data for the plotting%

x0(i,1)=NaN;

y0(i,1)=NaN;

end

simulatedCA = reshape(x0,720,n+1);

tsimulatedPA = reshape(y0,720,n+1);

plot (x,y)

hold on

plot (minipressurecycleplotCA,highpressureplotP)

scatter (m,Maxpressure)

plot(simulatedCA,tsimulatedPA)

hold off

