model = mamfis();

model = addInput(model,[-2 2],'Name','X\_1');

model = addInput(model,[-2 2],'Name','X\_2');

model = addMF(model,'X\_1','trapmf',[-5 -4 -2 0],'Name','A\_1');

model = addMF(model,'X\_1','trimf',[-2 0 2],'Name','A\_2');

model = addMF(model,'X\_1','trapmf',[0 2 4 5],'Name','A\_3');

model = addMF(model,'X\_2','trapmf',[-5 -4 -2 0],'Name','B\_1');

model = addMF(model,'X\_2','trimf',[-2 0 2],'Name','B\_2');

model = addMF(model,'X\_2','trapmf',[0 2 4 5],'Name','B\_3');

model = addOutput(model,[-1 1],'Name','Y');

model = addMF(model,'Y','trapmf',[-5 -4 -1 0],'Name','C\_1');

model = addMF(model,'Y','trimf',[-1 0 1],'Name','C\_2');

model = addMF(model,'Y','trapmf',[0 1 4 5],'Name','C\_3');

regula1 = "If X\_1 is A\_1 and X\_2 is B\_2 then Y is C\_1";

regula2 = "If X\_1 is A\_1 and X\_2 is B\_3 then Y is C\_2";

regula3 = "If X\_1 is A\_2 and X\_2 is B\_2 then Y is C\_2";

regula4 = "If X\_1 is A\_2 and X\_2 is B\_3 then Y is C\_3";

lista\_regol = [regula1; regula2; regula3; regula4]

model = addRule(model,lista\_regol);

figure;

subplot(2,1,1);

plotmf(model,'input',1);

title('X\_1');

subplot(2,1,2);

plotmf(model,'input',2);

title('X\_2');

figure;

plotmf(model,'output',1);

title('Y');

figure;

gensurf(model);

title('powierzchnia wyjścia systemu');

X\_1 = -1.7;

X\_2 = 0.9;

input\_vals = [X\_1, X\_2];

Y\_vals = evalfis(input\_vals, model);

disp(['Wynik: ', num2str(Y\_vals)]);