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```

load('product_14 (3).mat')
close all,
p=12, MAX=2, MSE_id=zeros(1,MAX), MSE_val=zeros(1,MAX);

k=y';
ndata = size(k, 2);
procent = 82;
newpoints = floor(ndata*procent/100);

k = k(:);
yc = k(1:newpoints);
yval=k(length(yc):length(y))

for m=1:MAX
    fi_id=[ones(length(time(1:length(yc))),1), time(1:length(yc)),
    time(1:length(yc)).^3];
    fi_val=[ones(length(time(length(yc):length(y))),1),
    time(length(yc):length(y)) , time(length(yc):length(y)).^3];

    for i=1:m
        fi_id=[fi_id,cos(2*pi*i*time(1:length(yc))/p),
        sin(2*pi*i*time(1:length(yc))/p)];
    end
    Teta=fi_id\y(1:length(yc));
    yc=fi_id*Teta;
    E_id=y(1:length(yc))-yc;

    for i=1:length(yc)
        MSE_id(m)=MSE_id(m)+E_id(i).^2;
    end

    for i=1:m
        fi_val=[fi_val,cos(2*pi*i*time(length(yc):length(y))/p),
        sin(2*pi*i*time(length(yc):length(y))/p)];
    end
    yval=fi_val*Teta;
    E_val=y(length(yc):length(y))-yval;

    for i=1:length(yval)
        MSE_val(m)=MSE_val(m)+E_val(i).^2;
    end

    subplot(MAX,1,m), plot(time,y,'r', 1:length(yc),yc, 'g',
    time(newpoints:length(y)),yval, 'b')

    m, MSE_id(m)=MSE_id(m)/length(E_id), MSE_val(m)=MSE_val(m)/length(E_val)
end

figure, plot((1:MAX),MSE_id, 'm', (1:MAX), MSE_val, 'b'),
    legend('Identificare', 'Validare')

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$p =$

12

$MAX =$

2

$MSE_{id} =$

0 0

$yval =$

588

631

347

504

884

674

586

632

494

979

245

384

538

246

285

381

704

829

509

554

335

$m =$

1

$MSE_{id} =$

$1.0e+04 *$

2.2650 0

$MSE_{val} =$

---

1.0e+04 \*

4.7274            0

$m =$

2

$MSE_{id} =$

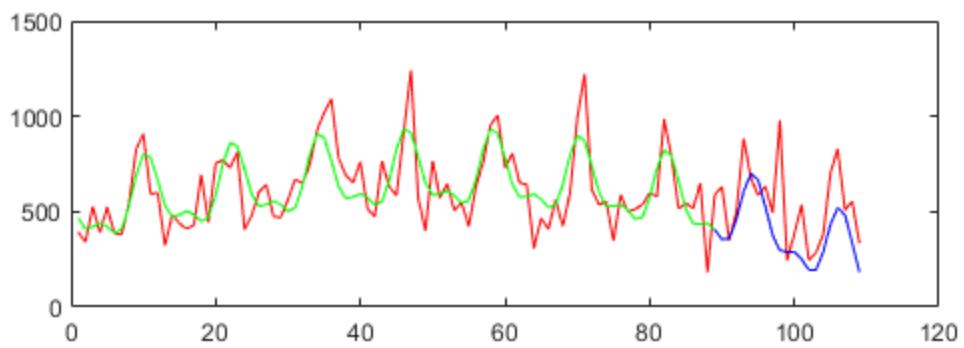
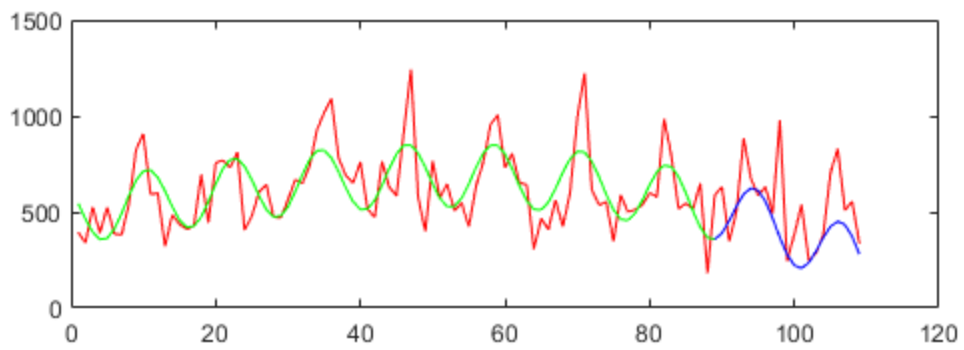
1.0e+04 \*

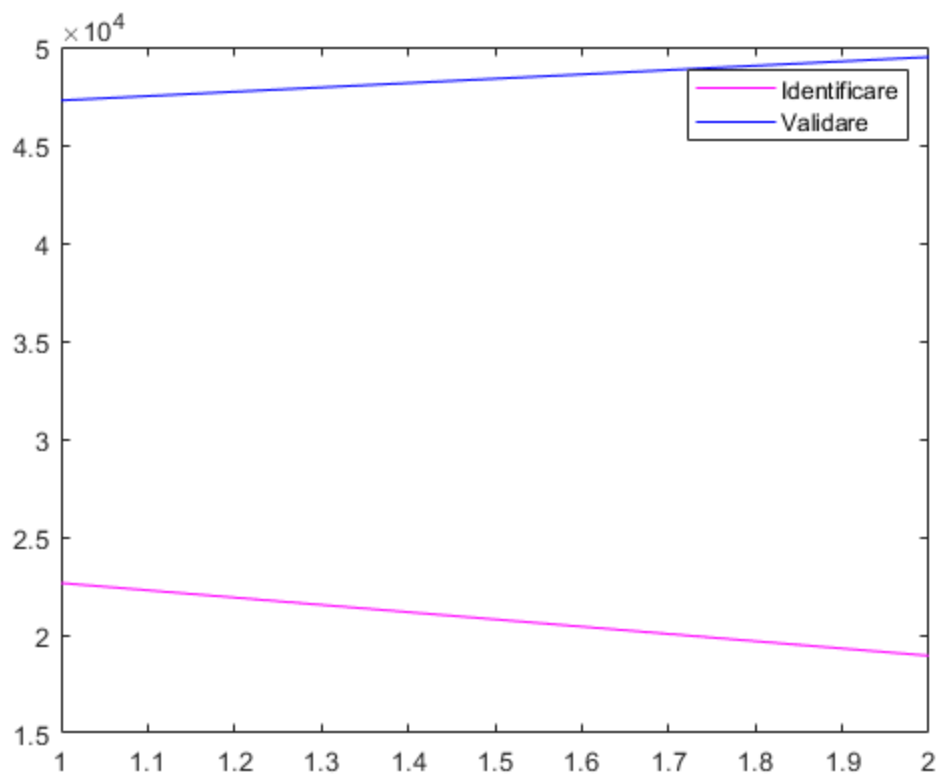
2.2650        1.8941

$MSE_{val} =$

1.0e+04 \*

4.7274        4.9489





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