%% test\_independence

%% SPEARMAN or KENDALL test for independence

% null hypothesis: uncorrelation

% if p<alpha, reject -> presence of correlation

% input: X row column

% tipo: 'Spearman', 'Kendall'

function [pM,rho,contarigett,stringout,stringflag]=test\_independence(X,tipo,alpha);

M=size(X,1); % n. of signals

N=size(X,2); % length of signals

[rho,pM] = corr(X','type',tipo);

contarigett=0;

for i=1:M

 for j=i+1:M

 if pM(i,j)<alpha

 contarigett=contarigett+1;

 end

 end

end

if contarigett == 0

 stringout='non-rejection: all signals are INDEPENDENT';

 stringflag=0;

else

 stringout='rejection: at least two signals are NOT INDEPENDENT';

 stringflag=1;

end