Similarity Measures

This project is

(1) published for "Cluster fusion-fission dynamics in the Singapore stock exchange",

by Boon Kin Teh and Siew Ann Cheong. Please refer to the paper for more details, and cite the paper if you are using this code for significance testing analysis, Thank you.

(2) and plan to be published with "Individual career progression can be more strategically planned", by Boon Kin Teh and others (under preparation).

Detail can be found in Boon Kin Teh dissertation, “Macroscopic & Mesoscopic dynamics of Financial Market”- Chapter Methodologies, Algorithms, and Models-Section Similarity Measures for more details.

# Code: CorrelationMeasure

**Calculate the correlation between pairs of variables.**

**Inputs:**1) ObservableTimeSeriesMatrix: TxN array, for N>1 variables with T observations  
2) Method: string, Method to calculate the correlation as follow  
 Pearson = Pearson correlation  
 Spearman = Spearman correlation  
 Kendall = Kendall Tau correlation  
 Digital = Digital correlation  
**Outputs:**Correlation = CorrelationMeasure(ObservableTimeSeriesMatrix,Method)  
1) Correlation: NxN double array, represents the correlation between each pair of variables.

# Code: AdjustedCosineSimilarity

**Calculate the adjusted cosine similarity between pairs of variables.**

**Inputs:**1) VariablesSpectrumMatrix: FxN array, for N>1 variables with F specturms (distributions).

2) GlobalSpecturm: 1xF array, representing the global specturm (distribution).

**Outputs:**

Similarity = AdjustedCosineSimilarity(VariablesSpecturm,GlobalSpecturm)  
1) Similarity: NxN double array, represents the adjusted cosine similarity between each pair of variables.