NDK_CONVOLUTION

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- C/C++
- .Net

Returns an array of cells for the convolution operator of two time series.

Returns

status code of the operation

Return values

NDK_SUCCESSOperation successfulNDK_FAILEDOperation unsuccessful. See Macros for full list.

Parameters

[in]	Χ	is the univariate time series data (a one dimensional array).	
[in]	N1	is the number of observations in X.	
[in]	Υ	is the second univariate time series data (a one dimensional array)	
[in]	N2	is the number of observations in Y.	
[out]	Ζ	is the convolution time series output	
[in,out]	W	is the maximum number of elements in Z.	

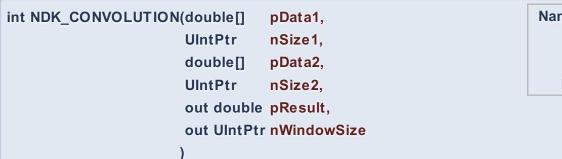
Remarks

- 1. The time series must be homogeneous or equally spaced.
- 2. The two time series can have different sizes.
- 3. Presample values of (X_t) and (Y_t) are assumed to be zero
- 4. The convolution operator is described as follow: \[Z_t=\sum_{j=\mathit{max}\left (1,t-M+1 \right)}^{\mathit{min}\left (N,t+M-1 \right)}X_jY_{M-t+j}\] Where:
 - $\circ \ \ (Z_t \)$ is the convolution time series
 - $\circ\ \(X_t\)$ is the first time series, with $\(N\)$ observations
 - $\circ\ \(Y_t\)$ is the second time series, with $\(M\)$ observations.
 - $(t \in N+M \right), i.e., (1 \leq N+M).$

Requirements

Header	SFSDK.H
Library	SFSDK.LIB
DLL	SFSDK.DLL

Examples



Namespace: NumXLAPI Class: SFSDK Scope: Public Lifetime: Static

Returns an array of cells for the convolution operator of two time series.

Return Value

a value from NDK_RETCODE enumeration for the status of the call.

NDK_SUCCESS operation successful

Error Error Code

Parameters

[in]	pData1	is the univariate time series data (a one dimensional array).				
[in]	nSize1	is the number of observations in pData1.				
[in]	pData2	is the second univariate time series data (a one dimensional array)				
[in]	nSize2	is the number of observations in pData2.				
[out]	pResult	is the convolution time series output				
[in,out] nWindowSize is the maximum number of elements in Z.						

Remarks

- 1. The time series must be homogeneous or equally spaced.
- 2. The two time series can have different sizes.
- 3. Presample values of (X_t) and (Y_t) are assumed to be zero
- 4. The convolution operator is described as follow: \[Z_t=\sum_{j=\mathit{max}\left (1,t-M+1 \right

)}^{\mathit{min}\left (N,t+M-1 \right)}X_jY_{M-t+j}\] Where:

- $\circ \ (Z_t)$ is the convolution time series
- $\circ\ \(X_t\)$ is the first time series, with $\(N\)$ observations
- $\circ\ \(Y_t\)$ is the second time series, with $\(M\)$ observations.
- $(t \in N+M \right), i.e., (1 e N+M).$

Exceptions

Exception Type	Condition
None	N/A

Requirements

Namespace	NumXLAPI
Class	SFSDK
Scope	Public
Lifetime	Static
Package	NumXLAPI.DLL

Examples

References

Hamilton, J.D.; Time Series Analysis, Princeton University Press (1994), ISBN 0-691-04289-6 Tsay, Ruey S.; Analysis of Financial Time Series John Wiley & SONS. (2005), ISBN 0-471-690740

See Also

[template("related")]