Measure Of Association Among Processes

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Muh 3, 1440 H

Abstract

Interactions among large numbers of stochastic processes are commonplace and arise naturally when a number of different input or control processes combine together to produce output processes. Examples of this phenomenon are usual in Neurophysiology, in Economics and in many biological systems.

Granger causality is a statistical measure of causal or directional influence from one time series to another and is based on a regressive model which attempts to provide a linear prediction of the behaviour of network activity (a time series) from its history. In this seminar I will demonstrate the concept of the Granger causality in ; (i) its simple performance for bi-variates autoregressive model of appropriate model order p and called bi-variates Granger causality, (ii) and the Granger causality in multivariate system based on fitting the underlying data by vector autoregressive models which is called multivariate Granger causality MVGC.