統計科學研究所
INSTITUTE OF
STATISTICAL SCIENCE

統計所學術演講　中研院統計所

新　聘　學　術　演　講

講　題：Regression association: From concordance to predictability

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地　點：統計所B1演講廳

Abstract

Measures of regression association aiming at predictability of a dependent variable Y from an independent variable X have received considerable attentions recently. However, there lacks a systematic discussion of theses measures, including their rationale, properties, estimation, and extensions. In this talk, we introduce a general class of rank-based regression association measures which views the regression association of Y from X as the association of two independent replications from the conditional distribution of Y given X. This general class of measures applies to both continuous and non-continuous random variables. We show that the so-called Markov product copulas can be employed as a neat and convenient building block for this general class of measures, and the measures so constructed can be expressed as a common form of the proportion of the variance of some function of Y that can be explained by X, rendering the measures a direct interpretation in terms of predictability. Also, the notion of two independent replications from the conditional distribution leads to a simple nonparametric estimation method based on the induced order statistics, together with simple asymptotic theory for continuous X and Y that are independent of each other. A real data application is presented to illustrate the utilities of the considered general framework of the regression association measures. Lastly, we discuss some possible extensions.

※ 實體與線上視訊同步進行。　　※ 茶 會：上午10：10開始。