國立中山大學跨領域及數據科學研究中心
國立中山大學應用數學系
學術演講

講　者：Professor Jacek Wesołowski
Mathematics and Information Science, Warsaw University of Technology, POLAND

講　題： On the Lukacs property in free probability

時　間：2015/11/26（星期四）14：10～15：00

地　點：理學院四樓理 SC 4009-1 室

茶　會：16:00 於理 SC 4010 室 (系辦公室)

摘要

In 1955 E. Lukacs proved that if X and Y are independent positive random variables and U=X+Y and V=X/(X+Y) are also independent then X and Y, necessarily, have gamma distribution. There are versions of this result for random matrices (also symmetric cone valued random variables), also such in which independence of U and V is weakened to some constancy of regression conditions. In the talk I will present analogue results in free probability. In particular, we will be concerned with, so called, dual regression approach assuming freeness of U and V and constancy of regressions of Y given X.

Further reading:

1. M. Bozejko, W. Bryc, On a class of free Levy laws related to a regression problem. J. Funct. Anal. 236 (2006), 59-77.
2. M. Capitaine, M. Casalis, Asymptotic freeness by generalized moments for Gaussian and Wishart matrices. Application to beta random matrices, Indiana Univ. Math. J. 53 (2004), 397–431.
3. K. Szpojankowski, On the Lukacs property for free random variables. Studia Math. 228 (2015), 55-72.
4. K. Szpojankowski, J. Wesolowski, Dual Lukacs regressions for non-commutative variables. J. Funct. Anal. 266 (2014), 36-54.

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