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**Seminar of the Department of Mathematics and Statistics, University of Cyprus**

Room: 037, ΣΘΕΕ01. Date: 22/03/2017 Time: 11:00

**Speaker :** Andreas Artemiou (Cardiff University)

**Title :** Penalized Principal Logistic Regression for Sparse Sufficient Dimension Reduction

**Abstract:**

The sufficient dimension reduction (SDR) is a successive tool for reducing dimensionality of predictors by finding the central subspace, a minimal subspace of predictors that preserves all the information of responses. When the predictor dimension is large, it is desired to have a sparse representation of the basis of the central subspace in order to achieve variable selection and dimension reduction simultaneously. In this talk, we propose a principal logistic regression (PLR) as an efficient SDR tool and further develop its penalized version to achieve the sparse SDR. Both simulation studies and real data analysis show promising performance of the proposed method compared to the existing ones. (Joint work with SeungJun Shin from Korea University)

Beyond the above work I will go further in discussing general what SDR is and how different classification tools are being used to improve the effectiveness of current SDR methodology.