國立政治大學統計學系
學　術　演　講

主講人：**Prof. Vitara Pungpapong**
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題　目：**Empirical Bayes Variable Selection via ICM/M Algorithm**

時　間：**民國 113 年 11 月 11 日 (星期一) 下午 1：30**

地　點：**國立政治大學逸仙樓 050101 教室**

摘　要：

High-dimensional regression poses significant challenges due to the large number of predictors relative to the sample size. Variable selection is essential to identify the truly relevant predictors and improve model interpretability and prediction accuracy. In this research, we employ an Empirical Bayes framework assuming sparse prior for regression coefficients. To mitigate computational costs, we propose Iterated Conditional Modes/Median (ICM/M) algorithm for implementation. The iterative conditional modes are employed to obtain data-driven estimates of hyperparameters, and the iterative conditional medians are used to estimate the model coefficients. The closed-form solution in each step makes ICM/M efficient, even for complex prior structures. Originally designed for normal linear regression with an undirected graph network prior among predictors, we extend ICM/M to generalized linear models and incorporate a directed graph prior, broadening its applicability and enhancing its ability to capture complex relationships between predictors.

歡迎參加

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