Boston University Statistics and Probability Seminar Series

Constraints on FDR control and ways to address them

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Thursday, October 11, 2007, 4:00-5:00pm

Mathematics and Computer Science (MCS) Building, Room 149

111 Cummington Street, Boston

Tea and Cookies at 3:30pm in MCS 153

Abstract: False discovery rate (FDR) control is a popular approach to multiple hypothesis testing. However, the mechanism by which it works still needs to be understood. I will show that under regular conditions, the strength of evidence provided by data to identify true signals from noise is limited, and hence in many cases no multiple testing procedure can attain a good trade-off between power and the control of the so called positive FDR. I will discuss two methods to improve power and pFDR control, (1) testing at multiple locations in the domain of p-values; and (2) in the presence of multivariate data for each hypothesis, testing using multivariate p-values. I will also show how large deviations principle can be applied to identify the minimum amount of data required to attain a target pFDR control level.

For directions and maps, please see *http://math.bu.edu/research/statistics/statseminar.html.*