



THE UNIVERSITY OF
CHICAGO

Department of Statistics

STATISTICS COLLOQUIUM

ERY ARIAS-CASTRO

Department of Mathematics
University of California, San Diego

Distribution-free Multiple Testing

MONDAY, October 17, 2016, at 4:00 PM

Eckhart 133, 5734 S. University Avenue

Refreshments following the seminar in Jones 111

ABSTRACT

We study a stylized multiple testing problem where the test statistics are independent and assumed to have the same distribution under their respective null hypotheses. We first show that, in the normal means model where the test statistics are normal Z-scores, the well-known method of (Benjamini and Hochberg, 1995) is optimal in some asymptotic sense. We then show that this is also the case of a recent distribution-free method proposed by Foygel-Barber and Candès (2015). The method is distribution-free in the sense that it is agnostic to the null distribution — it only requires that the null distribution be symmetric. We extend these optimality results to other location models with a base distribution having fast-decaying tails.

Joint work with Shiyun Chen (University of California, San Diego).

The corresponding paper is available online at
<https://arxiv.org/abs/1604.07520>

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