Wiener Biometrische Sektion
der Internationalen Biometrischen Gesellschaft
Region Österreich – Schweiz

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Einladung zum

Biometrischen Kolloquium

am Montag, den 21. Juni 2010 um 13:00 Uhr (s.t.)

in der Informatikbibliothek (Ebene 3, Raum 88.03.806) der Besonderen Einrichtung für Medizinische Statistik und Informatik (MSI) der Medizinischen Universität Wien
Spitalgasse 23, 1090 Wien

Vortragender:

Helmut Finner
(German Diabetes Center at the Heinrich Heine University, Institute of Biometrics and Epidemiology, Duesseldorf, Germany):

On the false discovery rate and control of expected number of false rejections

Wir freuen uns auf zahlreichen Besuch.

Georg Heinze
Präsident

Martin Posch
Sekretär

On the false discovery rate and control of expected number of false rejections

Helmut Finner

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Abstract. Much research has been done concerning control of the false discovery rate (FDR) in multiple hypotheses testing problems, see for example Benjamini and Hochberg (1995), Benjamini and Yekutieli (2001), Finner and Roters (2002), Storey et al. (2004), Finner et al. (2007, 2009). Control of the FDR means to control the expected proportion of rejected true null hypotheses with respect to all rejected hypotheses. Methodology and application of FDR controlling procedures are still very active research fields. A further interesting characteristic of multiple testing procedures is the expected number false rejections (ENFR). In this talk we investigate methods which allow simultaneous control of the FDR and ENFR. Thereby we discuss relationships between FDR, ENFR and rejection curves defining multiple test procedures. It will be shown that the asymptotically optimal rejection curve (AORC) introduced in Finner et al. (2009) plays a crucial role for powerful procedures controlling FDR and ENFR simultaneously. Finally, control of ENFR provides an attractive alternative stand alone error rate criterion. This talk is based on joint work with Marsel Scheer (DDZ, Düsseldorf).

References

Benjamini, Y. and Hochberg, Y. (1995). Controlling the false discovery rate: A practical and powerful approach to multiple testing. J. R. Stat. Soc. Ser. B57, 289-300.

Benjamini, Y. and Yekutieli, D. (2001). The control of the false discovery rate in multiple testing under dependency. Ann. Stat. 29, 1165-1188.

Finner, H. and Roters, M. (2002). Multiple hypotheses testing and expected type I errors. Ann. Stat. 30, 220-238.

Storey J. D., Taylor, J. E. and Siegmund D. (2004). Strong control, conservative point estimation, and simultaneous conservative consistency of false discovery rates: A unified approach. J. R. Stat. Soc. Ser. B66, 187-205.

Finner, H., Dickhaus, T. and Roters, M. (2007). Dependency and false discovery rate: Asymptotics. Ann. Stat. 35, 1432-1455.

Finner, H., Dickhaus, T. and Roters, M. (2009). On the false discovery rate and an asymptotically optimal rejection curve. Ann. Stat. 37, 596-618.