

Gastvortrag

Donnerstag, 23. Jänner 2014
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Hörsaal 421

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Multiple testing by multiple contrast tests – using R

Abstract:

Most common multiple comparison procedures (MCP) can be formulated as multiple contrast tests (Hothorn, 2006). Within this framework, MCP's differ according to their specific contrast matrix and consequently to the correlation matrix of the multivariate t-distribution only. Known MCPs, such as Tukey (1953), Dunnett(1955), Williams (1971) etc., are shown as special cases. Furthermore, less common MCP's are formulated accordingly, e.g. comparison against grand mean (so-called ANOM) (Djira 2009), change-point comparisons (Hirotzu 2011), umbrella-protected trend tests (Bretz 2003), the combination of Dunnett and Williams test, interaction contrasts in two-way layouts (Kitsche, 2013). Multiple contrast tests are formulated for the difference and ratio (Dilba, 2004) of expected values (assuming Gaussian distribution, but heterogeneous variances in general unbalanced designs) and for relative effect sizes (Konietschke, 2012). Instead of adjusted p-values, the focus is on simultaneous confidence intervals in the GLM, e.g. for proportions (Schaarschmidt, 2009), censored-time-to-event data (Herberich, 2012).

Finally, related real data examples are explained using the R packages multcomp, mratios (Dilba 2007), nparcomp (Konietschke 2012) and MCPAN.