

MATHEMATIK-ARBEITSPAPIERE

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**NORMAL GOODNESS-OF-FIT TESTS FOR
PARAMETRIC MULTINOMIAL MODELS
WITH LARGE DEGREES OF FREEDOM**

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Summary

Normal goodness-of-fit tests are proposed concerning models for independent multinomials with unknown parameters to be estimated. The tests are based on first-order normal approximations of the power-divergence statistics - including Pearson's X^2 and the likelihood ratio G^2 - and apply for large degrees of freedom. No restrictions are imposed on the multinomial sizes (admitting low as well as large expectations in each cell), but simplifications are given in cases where the harmonic resp. arithmetic mean of the sizes are large too. The underlying limit results are presented informally and without proofs, which are given elsewhere. Generalized linear models for binomial data are discussed in more detail, including illustrations of the methods using published data.

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