1022 Simultaneous accounting for heterogeneity of (co) variance components in genetic evaluation of type traits. N. Gengler[1, 2], G. R. Wiggans*[3], J. R. Wright[3], and T Druet[1,2], [1]*Gembloux Agricultural University, Gembloux,* [2] *and National Fund for Scientific Research, Brussels, Belgium,* 3 *Agricultural Research Service, USDA, Beltsville, MD*.

The multi-trait canonical transformation genetic evaluation system for type traits was modified to estimate adjustments for heterogeneous variance (**HV**) simultaneously with estimated breeding values (**EBV**) for final score and linear traits. Heterogeneity, estimated for transformed traits, was regressed within parity toward population mean by fitting a model with fixed effects of mean final score for herd, size of contemporary group, appraisal month, and year-season and a random effect for interaction between herd and appraisal date. Method R was used to estimate variances for the heterogeneity model within each EBV iteration. F or 2497 bulls that had been used for artificial insemination, correlations between HV-adjusted and February 2001 official evaluations ranged from 0.981 for suspensory ligament to 0.996 for dairy form. Annual trend for bull EBV was lower with HV adjustment than for official evaluations for all traits except teat length (0.073 points less for dairy form to 0.020 points more for teat length) with the largest percentage reduction (26.4%) for front teat placement. Mean absolute values of differences between HV-adjusted and official evaluations and standard deviations (**SD**) of those differences generally increased as reliabilities increased to about 80% but decreased slightly for reliabilities of >90%. Mean differences were largest for bulls born from 1985 through 1994 and bulls with daughters with lowest mean final scores. Mendelian sampling (evaluation minus mean of parent evaluations) was calculated for cows born from 1984 through 1998.Mendelian-sampling SD with HV analysis declined less over time than for official evaluations. For regression of SD on birth year, slope from the HV analysis ranged from 21% of slope for official evaluations for rear udder height to 76% for rump angle. Type evaluations of Ayrshires, Brown Swiss, Guernseys, Jerseys, and Milking Shorthorns will be adjusted for HV to enable more accurate selection decisions.

Key Words: heterogeneous variance adjustment, type evaluation.