

Tolerance intervals in mixed models and confidence intervals for lognormal models

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Abstract

The generalized confidence interval idea is used in the derivation of tolerance limits for the one-way random model. We also present confidence intervals for the mean of a lognormal model, using also an adaptation of the concept of generalized confidence interval. Simulation studies and real data examples are provided to illustrate the performance of both methods.

References

- Fonseca, M., T. Mathew, J.T. Mexia, and R. Zmyślony (2007). Tolerance intervals in a two-way nested model with mixed or random effects. *Statistics* 41, 289–300.
- Tian, L. and J. Wu (2007). Inferences on the mean response in a logregression model: The generalized variable approach. *Stat. Med.* 26, 5180–5188.
- Weerahandi, S. (1993). Generalized confidence intervals. *J. Am. Stat. Assoc.* 88, 899–905.
- Weerahandi, S. (1996). *Exact statistical methods for data analysis*. 2nd print. Berlin: Springer-Verlag.
- Wu, J., A.C.M. Wong, and G. Jiang (2003). Likelihood-based confidence intervals for a log-normal mean. *Stat. Med.* 22, 1849–1860.