Generalized count data regression in R

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Fitting functions for the basic Poisson and negative binomial regression models have long been available in base R and in the well-known **MASS** package, respectively. More recently, a number of modified or generalized regression models for count data have become available. Specifically, there now exist functions for fitting hurdle and zero-inflation models in package **pscl** (see Zeileis, Kleiber and Jackman, forthcoming), for fitting Poisson-inverse Gaussian mixtures in package **gamlss** (Stasinopoulos and Rigby, 2007) and for fitting finite Poisson mixtures in package **flexmix** (Leisch, 2004).

The talk will present an overview of the available methods along with empirical illustrations. It will also present functions for some further generalized count data models of recent interest that are not yet publicly available, and suggest directions for future work.

References:

Leisch, F. (2004). FlexMix: A general framework for finite mixture models and latent class regression in R. *Journal of Statistical Software*, 11(8).

Stasinopoulos, D.M., and Rigby, R.A. (2007). Generalized additive models for location, scale and shape (GAMLSS) in R. *Journal of Statistical Software*, 23(7).

Zeileis, A., Kleiber, C., and Jackman, S. (forthcoming). Regression models for count data in R. *Journal of Statistical Software*.

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