We present several notions of high-level dependence for stochastic processes, which have appeared in the literature. We calculate such measures for discrete and continuous-time models, where we concentrate on time series with heavy-tailed marginals, where extremes are likely to occur in clusters. Such models include linear models and solutions to random recurrence equations; in particular, discrete and continuous-time moving average and (G)ARCH processes. To illustrate our results we present a small simulation study.

Stichworte: ARCH, COGARCH, extreme cluster, extreme dependence measure, extremal index, extreme value theory, GARCH, linear model, multivariate regular variation, nonlinear model, Lévy-driven Ornstein-Uhlenbeck process, random recurrence equation

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