

Publicacions més rellevants de la línia de recerca:
Desenvolupament i ajust de models estadístics per a dades financeres

Referència: del Castillo, J. and Lee, Y. GLM-methods for volatility models. *Statistical Modelling*, **8(3)** (2008), pp. 263–283.

Abstract: We propose a multivariate volatility model for the behaviour of eight international equity indices. We show that many volatility models with heavy tails in financial work can be viewed as the GLM class of models with random effects in the dispersion. Hence, the h-likelihood approach, which provides efficient and simpler algorithms for GLM class, can be used as an estimation method for models used in finance. A comparison of the h-likelihood estimators with the ML estimators is made and its relative merits are discussed.

Referència: del Castillo, J. and Daoudi, J. Estimation of the generalized Pareto distribution. *Statistics and Probability Letters*, **79** (2009), pp. 684–688.

Abstract: This paper provides precise arguments to explain the anomalous behavior of the likelihood surface when sampling from the generalized Pareto distribution for small or moderate samples. The behavior of the profile-likelihood function is characterized in terms of the empirical coefficient of variation. A sufficient condition is given for the global maximum of the likelihood function of the Pareto distribution to be at a finite point.

Referència: del Castillo, J. and Daoudi, J. The mixture of left-right truncated normal distributions. *Journal of Statistical Planning and Inference*, **139** (2009), pp. 3543–3551.

Abstract: This paper introduces the mixture of left-right truncated normal distributions, from the spreads between bid and ask prices, as a statistical model for handle non-normality of asset price returns. It has been proved that there is only one maximum for the likelihood function of the new model.