UNIVERSIDADE DA CORUÑA

gmodes DPTO. DE MATEMÁTICAS

CONFERENCIA

Asymmetric distributions and quantile estimation

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Data: **28 de novembro de 2018.**
Hora: **12:00 h.**
Lugar: **Aula de Grados Víctor Gulías – Facultade de Informática.**

Resumen

In this talk we study a general class of asymmetric distributions. Their probabilistic properties lead to explicit expressions for all main characteristics (mean, variance, skewness, kurtosis...). Estimation of the parameters via method of moments and the maximum likelihood method is discussed, and the asymptotic behaviour of the estimators is established, again in the general framework. The emphasis in the inference is on quantile estimation. Interesting examples include new asymmetric normal, logistic and Student t distributions. The practical use of the studied asymmetric distributions is illustrated via real data examples.

In a regression setting the interest is in estimating conditional quantiles. Starting from the above family of asymmetric densities, we consider a class of conditional density functions, in which the conditional quantile takes the form of a simple location-scale expression. Local likelihood techniques are then used to provide semiparametric estimates of the regression quantile curves.