Publicacions més rellevants de la línia de recerca:
Caracteritzacions de distribucions amb aplicacions pràctiques.

Referència: Puig, P. A note on the harmonic law: A two-parameter family of distributions for ratios. *Statistics and Probability Letters*, **78** (2008), pp. 320–326.

Abstract: Consider two-parameter statistical models for positive continuous observations. Suppose that these models are closed under change of scale and under reciprocals, properties that are very appropriate when the observations are ratios of positive magnitudes. Additionally, suppose that the maximum likelihood estimator of the population mean is the sample mean (Gauss's principle). Surprisingly, only one statistical model satisfies these three properties and this is a special case of the generalized inverse gaussian family of distributions known as Harmonic Law.

Referència: Puig, P. and Valero, J. Characterization of count data distributions involving additivity and binomial subsampling. *Bernoulli*, **13(2)**, (2007). pp. 544–555.

Abstract: In this paper we characterize all the r-parameter families of count distributions (satisfying mild conditions) that are closed under addition and under binomial subsampling. Surprisingly, few families satisfy both properties and the resulting models consist of the rth-order univariate Hermite distributions. Among these, we find the Poisson (r = 1) and the ordinary Hermite distributions (r = 2).

Referència: Puig, P. and Valero, J. Count data distributions: some characterizations with applications. *Journal of the American Statistical Association*, **101**, (2006). pp. 687–692.

Abstract: In this article we characterize all two-parameter count distributions (satisfying very general conditions) that are partially closed under addition. We also find those for which the maximum likelihood estimator of the population mean is the sample mean. Mixed Poisson models satisfying these properties are completely determined. Among these models are the negative binomial, Poisson-inverse Gaussian, and other known distributions. New count distributions can also be constructed using these characterizations. Three examples of application are given.