

# Maximum likelihood and bayesian estimates and prediction for geometric distribution based on $\delta$ -records

R. Gouet<sup>1</sup> F.J. López<sup>2</sup>, L.P. Maldonado<sup>2</sup>, G. Sanz<sup>2</sup>

## SUMMARY

We propose maximum likelihood and Bayes estimators for the parameter of the Geometric distribution based on  $\delta$ -records. The Bayes estimates are obtained using informative and non-informative prior distributions. Empirical Bayes estimates are also obtained. In order to evaluate the different estimates we calculate the mean square errors through Monte Carlo simulations and compare them with the corresponding estimators based on usual records [1]. Also, Bayesian prediction of the future record values are obtained and discussed.

**Keywords:**  $\delta$ -Records, Bayes Estimation, Bayes prediction, Empirical Bayes, Geometric Distribution.

**AMS Classification:** 62F15, 62M20, 60G70

## References

- [1] DOOSTPARAST, M. AND AHMADI, J. (2006). Statistical analysis for geometric distribution based on records. *Computers and Mathematics with Applications*, 52, 905–916.

<sup>1</sup>Dpto. Ingeniería Matemática and CMM (UMI 2807, CNRS), Universidad de Chile.  
rgouet@dim.uchile.cl

<sup>2</sup>Dpto. de Métodos Estadísticos. Universidad de Zaragoza (Spain).  
javier.lopez@unizar.es, lmguaje@unizar.es, gerardo@unizar.es