Project: Poisson models with presence of change-points.

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Brief Description: Poisson models are used to describe many problems arising in real life. In this project the interest resides in studying the case where change-points are present in the model. We consider the case where the number of change-points is unknown. The aim is to understand such models and study the possible ways of estimating the number of change-points.

Theoretical/Simulation Project

Prerequisites: Markov chains, Bayesian Inference, Computing ability to code programs.

References

Green, P. J. Reversible jump Markov Chain Monte Carlo computation and Bayesian model determination. (1995) Biometrika 82, 711-732.

Robert, C. P and Casella, G. Monte Carlo Statistical Methods. (1999) Springer.

Yang, T. Y. and Kuo, L. Bayesian binary segmentation procedure for a Poisson process with multiple change-points. (2001) Journal of Computational and Graphical Statistics 10, 772-785.