Seminari del Departament d'Estadística i Investigació Operativa

Universitat Politècnica de Catalunya

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Título: Discrete-Zipf-PSS-INAR(1) Processes: Properties and Applications.

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Abstract: This paper focuses on the INAR(1) model defined through binomial thinning, and on the Zipf-Poisson-Stopped-Sum (Zipf-PSS) distribution. Two different processes are considered: i) the INAR(1) process driven by Zipf-PSS innovations, and ii) the INAR(1) processes with Zipf-PSS marginal distribution. In the innovations process, the marginal mean is inversely influenced by one minus the survival parameter, in such a way that large survival probability is translated in large values of the marginal mean. In contrast, by construction, the marginal process has a marginal mean not influenced by the survival parameter, and is the innovations' mean the one that decreases as the survival parameter increase, indicating that the greater the survival parameter is, less immigration. The second model is thus useful in situations where there are limited resources.
The Poisson INAR(1) model is proved to be obtained as a limit of the first proposed process. In both cases, parameter's estimations and parameter interpretations are provided.
The usefulness of such models is illustrated through the analysis of two real discrete time series.

Sobre la autora:

Born in Mataró, mother of two: Ferran and Carles.

She started working at UPC in 1989, and since then she has been: Professora associada, Professora titular d'Escola universitària interina, Professora titular d'Escola universitària and since 1999 she is Professora titular d'Universitat.

She was professor at the Matemàtica Aplicada Department for 26 years, and has been professor at the Departament d'Estadística i Investigació Operativa for 10,5 years.

In research:

- 18 articles in indexed journals and 3 in non-indexed journals.
- 10 Technical Reports.
- 2 Books.
- 3 Book Chapters.
- 2 PhD Thesis supervised.
- Taken part in 21 competitive research projects.
- 46 presentations in Workshops and Conferences.
- Research stays at the universities of: Aarhus (Dinamarca), Chicago (USA), Beçanson (França), Talca (Chile) i Tecnico de Lisboa (Portugal).

In teaching:

- Has taught in 4 faculties: FIB, FME, Facultat de Nàutica de Barcelona i ETSEIB.
- Has created 8 subjects, and taught in more than 15.
- Supervised about 20 BSc and MSc theses.

In management:

- Deputy Director of the Dept. Matemàtica Aplicada II (2006-2009).
- Director of the MESIO UPC-UB Summer School (2018-2021).
- Coordinator of MESIO UPC-UB (2019-2022).
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