

McMASTER UNIVERSITY
GRADUATE PROGRAM IN STATISTICS

STATISTICS SEMINAR

- Speaker:** Dr. Narayanaswamy Balakrishnan
Department of Mathematics and Statistics
McMaster University
- Title:** Over/Under-Dispersed Poisson Distributions and Processes
Day: Tuesday, September 18, 2007
- Time:** 3:30 - 4:30 PM
- Place:** HH/217 - Deloitte Colloquium Room
(refreshments in HH/216 at 3:00 PM)

SUMMARY

In this talk, I will establish several connections of the Poisson weight function to overdispersion and underdispersion. Specifically, I will show that the logconvexity (logconcavity) of the mean weight function is a necessary and sufficient condition for overdispersion (underdispersion) when the Poisson weight function does not depend on the original Poisson parameter. I will also discuss some properties of the weighted Poisson distributions (WPDs). I will then introduce a notion of pointwise duality between two WPDs and discuss some associated properties. Next, after presenting some illustrative examples and providing a discussion on various Poisson weight functions used in practice, I will make some concluding remarks. Finally, I will use these results to introduce and discuss over/under-dispersed Poisson processes.

REFERENCES

- C. C. Kokonendji, D. Mizère and N. Balakrishnan (2007) Connections of the Poisson weight function to overdispersion and underdispersion. To appear in *Journal of Statistical Planning and Inference*.

A preprint of the paper is available online at

http://www.math.mcmaster.ca/canty/seminars/bala_article.pdf

ABOUT THE SPEAKER



Dr. Balakrishnan is a professor in the Department of Mathematics and Statistics at McMaster University. Originally from India, he obtained his B.Sc. and M.Sc from the University of Madras and a PhD from The Indian Institute of Technology in Kanpur. Just after finishing his PhD, Dr. Balakrishnan came to Canada and held post-doctoral research fellowships at McMaster and the University of Manitoba. In 1986 he joined the faculty at McMaster as an assistant professor. In 1995, he became a full professor.

Dr. Balakrishnan is a very active author, conference organizer and graduate supervisor. He has supervised 44 M.Sc. students and 24 PhD students. He is the co-author of 14 books most recently *Precedence-Type Tests and Applications* with his former PhD student Tony Ng. He has also edited a large number of volumes and written an extraordinary number of journal articles. His research interests include applications of order statistics and distribution theory.

MORE SEMINAR INFORMATION

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