

Speaker: Assoc. Professor Gillian Heller
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Date: Tuesday 20th May, 2008 Time: 2-3pm
Venue: E4A523 (level 5 seminar room)

Title: Zero-adjusted and random sum models: mean and dispersion modeling

Abstract:

We consider mean and dispersion models for an outcome variable which is a sum of a random number of non-negative random variables. An example is total insurance claim size in a period, where there can be C claims on a policy within the period, $C=0, 1, 2, \dots$. In a fixed period, a policy will either experience no claim, in which case the claim amount is identically zero; or one or more claims, which are non-negative amounts typically having extremely right-skewed distributions. The distribution of the total is mixed discrete-continuous: a continuous, right-skewed distribution with a single probability mass at zero. The special case $C=0, 1$ is considered: this gives rise to the zero-adjusted gamma and inverse Gaussian models. The model explicitly specifies log-linear models for the four parameters in the distribution of the total amount. The method is illustrated on an Australian car insurance data set.