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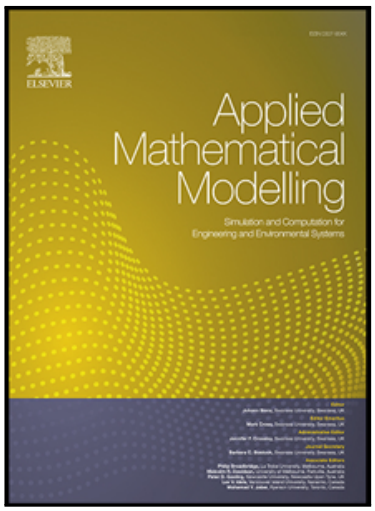

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On the Bell distribution and its associated regression model for count data

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Highlights

- We define the one-parameter discrete Bell distribution, which has a simple form for its probability mass function.
- It is shown to be a particular solution of a multiple Poisson process.
- It is useful for modelling count data with greater variability than the Poisson distribution allows.
- We introduce a Bell regression model with statistical inference procedures, diagnostic tools, and computer implementation.
- An application to real data suggests that the new model is useful in practice.

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