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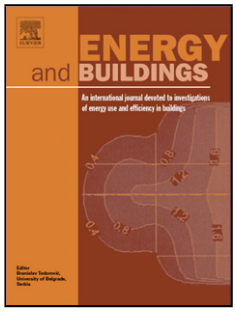

Title: A generalised model of electrical energy demand from small household appliances

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Highlights

- Proposed methodology for the modelling of the energy use of small appliances in households, categorised in four groups: audio-visual, computing, kitchen and other appliances.
- Predictions of time varying fractional power demands of aggregations of appliance.
- Comparison of seven different modelling approaches, based on two types of stochastic process: discrete time random (Markov) process (combined with clustering algorithms for matrix reduction) and continuous time random (Survival analysis) process.
- Models are validated using three types of evaluation measure: time series analysis, model accuracy and aggregated energy use.
- These validation measures suggest that the modelling of survival in discrete states performs well and is straightforward to integrate with energy simulation programs.

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