

Kolloquium „Statistische Methoden in der empirischen Forschung“

Wann: 03. Februar 2026, 17:00 – 18:30 Uhr

Wo: [Campus Charité Mitte, Raum 02.002, Virchowweg 10, 10117 Berlin](#)

Online-Übertragung: der Link wird auf der [Website](#) zur Verfügung gestellt

Vortragssprache: Englisch

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How To Build Your Latent Markov Model – The Role of Time and Space

Statistical models that involve latent Markovian state processes have become immensely popular tools for analysing time series and other sequential data. However, the plethora of model formulations, the inconsistent use of terminology, and the various inferential approaches and software packages can be overwhelming to practitioners, especially when they are new to this area. We thus aim to provide guidance for both statisticians and practitioners working with latent Markov models by offering a unifying view on what otherwise are often considered separate model classes, from hidden Markov models over state-space models to Markov-modulated Poisson processes. In particular, we provide a roadmap for identifying a suitable latent Markov model formulation given the data to be analysed. Furthermore, we emphasise that it is key to applied work with any of these model classes to understand how recursive techniques exploiting the models' dependence structure can be used for inference. The R package LaMa adapts this unified view and provides an easy-to-use framework for very fast (C++ based) numerical maximum likelihood estimation of any of the models discussed in this paper, allowing users to tailor a latent Markov model to their data using a Lego-type approach.