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## Bayesian model determination in complex systems

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## Proposition/Stellingen

Belonging to the thesis

# Bayesian Model Determination in Complex Systems

Abdolreza Mohammadi

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1. Network modelling provides a potential tool to discover complicated relationships among variables in complex systems. (Chapter 1)
2. In Bayesian graphical modelling, the key element is to design a computational efficient search algorithm which explores the graph space to distinguish important edges from irrelevant ones and detect the underlying graph with high accuracy. (Chapter 2)
3. Gaussian copula model is one potential way in observational studies to analyse multivariate data of diverse type, including binary, ordinal and continuous. (Chapter 3)
4. In modern science, statisticians should not only developing statistical methods but also designing statistical software for the applications of their methods in practice. (Chapter 4)
5. One of the most widely used and flexible models for modelling complex networks is the Exponential Random Graph Models. (Chapter 5)
6. Queuing theory construct a model to predict the performance measures such as waiting time and statistical methods provides a potential tool to estimate those performance measures. (Chapter 6)
7. Statisticians who wish to make an impact in modern science, need to make a more active role in programming.