

# Moment Varieties of Non-Gaussian Graphical Models

*Thursday, 10 March 2022 17:10 (30 minutes)*

In this talk we shed light on varieties of moments arising from graphical models. A directed graph corresponds to a statistical model where the nodes represent random variables and arrows encode relations between them. The polynomial relations between entries of the covariance matrices have been previously studied from an algebraic and combinatorial point of view. Dropping Gaussianity makes moment tensors of higher order meaningful. We explain how to extend the combinatorial description from covariance matrices to higher-order tensors and use computational algebra to obtain a description for the third-order moment variety for trees. We also describe the polytopes coming from the moment parametrisation and explain the situation for graphs with hidden variables.

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**Session Classification:** Vorträge 1