Otto-von-Guericke-Universität Magdeburg
Fakultät für Mathematik

Auf Einladung des Institutes für Algebra und Geometrie spricht

Maximilian Wiesmann
(MPI Leipzig)

über das Thema

Quantum Graphical Models

Zeit: Dienstag, 19. Dezember 2023, 13.00 Uhr, G02-210 oder
per Zoom Meeting ID 971 4945 5855, passcode 490213

Zu diesem Vortrag laden wir alle Interessierten herzlich ein.

Prof. Dr. Thomas Kahle / Dr. Julian Vill

Abstract: A graphical model is a well-studied object in statistics encoding independence relations between random variables. In a *quantum* graphical model, the role of random variables is taken by density matrices representing physical quantum systems. An analogue to independence can be formulated in this context via quantum mutual information. In this talk I will first introduce basic notions of quantum information theory and will then propose different algebraic varieties that can be associated with a quantum graphical model. Different algebraic and geometric properties of these quantum graphical models will be discussed, as well as a quantum analogue to maximum likelihood estimation. This is based on joint work with Eliana Duarte and Dmitrii Pavlov.