

Otto-von-Guericke-Universität Magdeburg
Fakultät für Mathematik

Auf Einladung des Institutes für Algebra und Geometrie spricht

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über das Thema

Metric algebraic geometry of the Grassmannian of Lines

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Zu diesem Vortrag laden wir alle Interessierten herzlich ein.

Prof. Dr. Thomas Kahle

Abstract: The Grassmannian can be realized in many different ways. We focus on two of these: the Plücker embedding and the projection embedding. The projection embedding of $Gr(k, n)$ is the set of real, symmetric projection matrices of rank k . We illuminate the foundational linear algebra that connects these two embeddings. We introduce the Grassmann distance degree as the algebraic degree of the Euclidean distance problem on subvarieties of the Grassmannian in its projection embedding when the data is also in the Grassmannian. We report on the GD degrees of geometrically meaningful subvarieties. In particular, we characterize the Schubert varieties that have Grassmann distance degree 1. This talk is based on joint work with Andrea Rosana and Bernd Sturmfels.