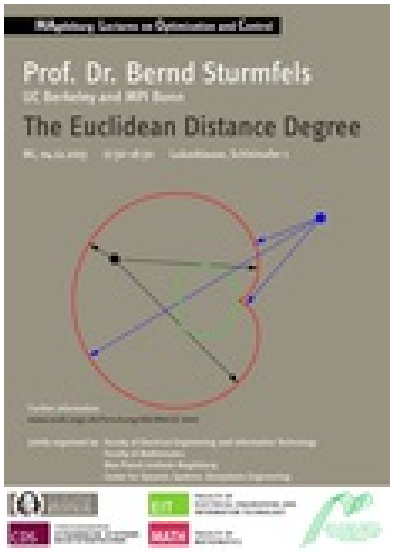
OTTO VON GUERICKE UNIVERSITÄT MAGDEBURG

MAGDEBURG LECTURES ON OPTIMIZATION AND CONTROL

Vortrag Prof. Bernd Sturmfels



The Euclidean Distance Degree

Prof. Bernd Sturmfels
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Time & Place

The presentation on December 4, 2013 will be given in the Lukas Klause ›(Schleinufer 1, 39104 Magdeburg) (http://ifatwww.et.uni-magdeburg.de/syst/maloc/seminars/Standort%20Lukas%20Klause.pdf) and starts at 5.30 p.m.

Abstract

The nearest point map of a real algebraic variety with respect to Euclidean distance is an algebraic function. The Euclidean distance degree is the number of critical points of this optimization problem. We focus on varieties seen in engineering applications, and we discuss exact computational methods. Our running example is the Eckart-Young Theorem which states that the nearest point map for low rank matrices is given by the singular value decomposition.

This is joint work with Jan Draisma, Emil Horobet, Giorgio Ottaviani, Rekha Thomas.