



TECHNISCHE UNIVERSITÄT  
CHEMNITZ

Fakultät für Mathematik  
Chemnitzer Mathematisches Colloquium

In der Reihe „Chemnitzer Mathematisches Colloquium“ der Fakultät für Mathematik der TU Chemnitz spricht

**Herr Prof. Dr. Didier Henrion,  
(LAAS-CNRS, University of Toulouse; Czech Technical University in Prague)**

über das Thema

**An introduction to the Lasserre hierarchy in polynomial optimization.**

Der Vortrag findet am

**Donnerstag, dem 3. Mai 2018, um 16.00 Uhr im Raum B202, Reichenhainer Straße 70**

statt.

Ich möchte Sie hiermit recht herzlich zu dieser Veranstaltung einladen. Das Kolloquium wird von Herrn Prof. Dr. Christoph Helmberg geleitet.

**Abstract:**

We survey a mathematical technology introduced in 2000 by Jean Bernard Lasserre to solve globally non-convex optimization problems on multivariate polynomials with the help of a hierarchy of convex semidefinite programming problems (linear matrix inequalities or LMI = linear programming problems in the cone of positive semidefinite matrices). Instrumental to the development of this technique is the duality between the cone of positive polynomials and the cone of moments. These basic objects are introduced and studied in detail, with a special focus on conic optimization duality, and some illustrative examples are described. Sketchy lecture notes are available at [arXiv:1309.3112](https://arxiv.org/abs/1309.3112).

Prof. Dr. Christoph Helmberg  
Dekan



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