

数学与系统科学研究院

## 计算数学所学术报告

(定期学术报告)

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报告题目: Power of linear forms

报告时间: 2008年12月4日(周四)

下午4:00—5:00

报告地点: 科技综合楼三层311

计算数学所报告厅

### Abstract:

In this talk, we shall show a relation between algebraic geometry and box splines. We transform box splines into ring theory and define zonotopal-Cox ring, which is a sub-ring of Cox-Nagata ring. We degenerate Cox-Nagata rings to toric algebras by means of sagbi bases induced by configurations over

**the rational function field. For del Pezzo surfaces, this degeneration implies the Batyrev–Popov conjecture that these rings are presented by ideals of quadrics. For the blow–up of projective  $n$ –space at  $n+3$  points, sagbi bases of Cox–Nagata rings establish a link between the Verlinde formula and phylogenetic algebraic geometry, and we use this to answer questions due to D’Cruz–Iarobbino and Buczyńska–Wisniewski. Inspired by the zonotopal algebras of Holtz and Ron, our study emphasizes explicit computations, and offers a new approach to Hilbert functions of fat points.**

**欢迎大家参加！**