首都师范大学数学科学学院
School of Mathematical Sciences Capital Normal University

学术报告
LECTURE

线上学术报告

Title: Symbolic powers and free resolutions of generalized star configurations of hypersurfaces

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Abstract

This is joint work with Kuei-Nuan Lin. As a generalization of the ideals of star configurations of hypersurfaces, we consider the a-fold product ideal $I_a(f_1^{m_1}\cdots f_s^{m_s})$ when $f_1,\dots,f_s$ is a sequence of n-generic forms in a polynomial ring and $1\le a\le m_1+\cdots+m_s$. Firstly, we show that this ideal has complete intersection quotients when these forms are of the same degree and essentially linear. Then, we study its symbolic powers while focusing on the uniform case with $m_1=\cdots=m_s$. For large a, we compute the projective dimension and Castelnuovo-Mumford regularity of symbolic powers of I. We also compute its resurgence and symbolic defect. Related Harbourne-Huneke containment problem and Demailly-like bound are considered as well. Finally, we show that these symbolic powers are sequentially Cohen-Macaulay.

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