北京理工大學

数学与统计学院学术报告

Concavity Inequalities for k-Hessian Operators and Their Applications

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摘 要： This talk presents quantitative concavity inequalities for k-Hessian operators and their role in the regularity theory of fully nonlinear elliptic equations. After a brief review of related developments, we introduce the main inequalities under dynamic semi-convexity and explain the key ideas in their proofs. The approach combines recursive concavity identities, suitable decompositions of direction vectors, and higher-dimensional lifting to control third-order terms arising in second-order estimates. We also discuss corresponding concavity inequalities in the complex setting. Finally, we discuss applications to sum-of-Hessians equations and Hessian quotient equations.

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