CENTRE
DE RECHERCHES
MATHÉMATIQUES

Tenseurs : information quantique, complexité et combinatoires quantiques

Tensors: Quantum Information, Complexity and Combinatorics

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Structure and Randomness as Barriers to Fast(er) Matrix Multiplication

In 2003, Cohn and Umans proposed a group-theoretic approach to bounding the exponent of matrix multiplication. Previous work within this approach ruled out certain families of groups as a route to obtaining ω=2, while other families of groups remain potentially viable. In this talk we'll discuss recent work that ruled out using groups of Lie type to obtain ω=2 within this framework. At the same time, we'll see how prior barriers fail to prove this fact.