

Do Tutte Polynomials Satisfy The Kontsevich Conjecture?

Jessica Su, supervised by Dr. Matilde Marcolli

Abstract - Short

The Kontsevich conjecture holds for a polynomial if its zeros are polynomially countable, i.e., if the number of zeros of that polynomial has polynomial dependence on the size of the field. Our aim is to determine which graphs yield Tutte polynomials that satisfy the Kontsevich conjecture. With computer software and logical reasoning we have indicated that very few polynomials satisfy the conjecture directly, but some satisfy a modified version of the conjecture. In those cases, the dependence is polynomial except at points where a certain parameter (and thus, the entire polynomial) is 0. This talk identifies examples of such polynomials as well as graphs for which the conjecture completely fails.