Identities of Kauffman monoids: finite axiomatization and algorithms

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Kauffman monoids were introduced by Temperley and Lieb in their studies on some problems in statistical physics. Later, they were independently rediscovered as geometric objects by Kauffman in his work on knot theory. Over the past few years it turned out that algebraic properties of Kauffman monoids are of interest too. The talk presents results on equational theories of Kauffman monoids found by the speaker and his coauthors. We have discovered that, even though these theories admit no finite axiomatization, there are certain cases in which the identities of Kauffman monoids can be recognized by polynomial time algorithms.

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