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*Skein Theory and  $q$ -series.*

The tail of the colored Jones polynomial is a  $q$ -power series invariant. We use the skein theory associated with the Kauffman bracket skein module to understand the tail of the colored Jones polynomial. we generalize this study further to trivalent graphs and study their tail using skein theory. In most cases, it turns out that the tail these trivalent graphs are interesting number-theoretic  $q$ -series. In particular, certain trivalent graphs give a skein theoretic proof for the Andrews-Gordon identities for the two variable Ramanujan theta function as well to corresponding identities for the false theta function. Finally, we give a product formula that the tail of such graphs satisfies. (Received August 01, 2014)