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## **Tutte Functions of Matroids**

## Abstract for the Combinatorics and Algebra Seminars 2008 October 7

A function defined on an arbitrary minor-closed class of matroids is a "Tutte function" if it satisfies the parametrized deletion-contraction law

 $F(M) = d_e F(M/e) + c_e F(M/e)$ 

whenever e is a point of M that is neither a loop nor a coloop. F need not have any other Tutte-style properties like multiplicativity. Here  $d_e$  and  $c_e$  are constants associated with e, independent of M but depending on the point e.

Functions of this kind appear in statistical physics and knot theory.

Joanna Ellis-Monaghan and I are studying the modules and algebras behind Tutte functions.

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