Around the Merino–Welsh conjecture

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Abstract: In 1999 Criel Merino and Dominic Welsh proposed a conjectured inequality between three evaluations of the Tutte polynomial of a graph. Since then the conjecture was extended to matroids. In the last two decades there have been many partial results about this conjecture. In this talk I will show a counter-example to the matroidal version. I will also discuss a tool called permutation Tutte polynomial that provided the intuition behind the counter-example and also enabled us to improve on a result of Bill Jackson. This is joint work with Csongor Beke, Gergely Kál Csáji and Sára Pituk.