

Tutte characters for combinatorial coalgebras

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The Tutte polynomial is a favourite invariant of matroids and graphs. So when one is working in a generalisation of these settings, for example arithmetic matroids or ribbon graphs, it is a tempting question to find a counterpart of the Tutte polynomial; answers have been given in many cases. Work of Krajewski, Moffatt, and Tanasa found a framework unifying the Tutte-like polynomials arising from graphs in surfaces using Hopf algebras. Our contribution, besides adding some more examples and observing that the machinery is useful for producing convolution formulae in the style of Kook-Reiner-Stanton-Etienne-Las Vergnas, is a generalisation of the formalism using comonoids in linear species.

Joint with Clément Dupont and Luca Moci.