

## **A colored version of Brylawski's tensor product formula and its applications**

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The tensor product of a graph and a pointed graph is obtained by replacing each edge of the first graph with a copy of the second. In this talk we outline a simple proof of Brylawski's formula for the Tutte polynomial of the tensor product which can be generalized to the colored Tutte polynomials introduced by Bollobás and Riordan. Consequences include formulas for Jones polynomials of (virtual) knots and for invariants of composite networks in which some major links are identical subnetworks in themselves.

All results presented are joint work with Yuanan Diao, some of them are also joint work with Kenneth Hinson.