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Title: Generalized string-net models at finite temperature.

Abstract: The string-net model has been introduced in 2005 by M. Levin and X.-G. Wen in 2005 and recently generalized by C.Lin, M. Levin, and F. Burnell. This generalized version allows one to build any achiral topological phases (i.e., with gapped edge modes). I will explain how to compute the degeneracies of the energy spectrum of this model by generalizing the Moore-Seiberg formula originally developed for topological quantum field theories. These degeneracies will lead to an exact and simple expression of the partition function valid for any theory, on any orientable surface, and any trivalent graph. Finally, I will discuss the behavior of Wegner-Wilson loops on contractible and non-contractible contours at finite temperature which unveil the particular role played by a special set of excitations, dubbed pure fluxons.