Khovanov type homologies for graphs

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Abstract. In 1999, M. Khovanov introduced a graded homology theory for knots, and proved their graded Euler characteristic is the Jones polynomial. These homology groups turn out to be surprisingly strong invariants and have sparked much attention in low dimensional topology. In this talk, we will discuss several analogous homology theories for graphs, that correspond to the chromatic polynomial (with Laure Helme-Guizon), or the Tutte polynomial (with E. Fanny Jasso-Hernandez), or the Bollobas-Riordan polynomial, or the Penrose polynomial (with Kerry Luse). Connection with other work will be discussed.