Meeting: 1000, Albuquerque, New Mexico, SS 14A, Special Session on Braids and Knots

1000-57-171 **Abhijit Champanerkar** and **Ilya Kofman*** (ikofman@math.columbia.edu), Department of Mathematics, Barnard College, Columbia University, New York, NY 10027, and **Oleg Viro**.

Spanning trees and Khovanov homology. Preliminary report.

Thistlethwaite showed that the Jones polynomial is a state sum over spanning trees of the Tait graph, obtained by checkerboard coloring a knot diagram. We show that there exists a complex generated by these spanning trees whose homology is the reduced Khovanov homology. In fact, the spanning tree complex can be obtained from Khovanov's reduced complex by elementary collapse operations. For alternating knots, this complex is the simplest possible because all boundary maps are zero.

This is work in progress, joint with Abhijit Champanerkar and Oleg Viro. (Received August 23, 2004)