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Sergei Chmutov* (chmutov@math.ohio-state.edu), 1760 University Drive, Mansfield, OH 44906. *Evaluations of the Tutte-Krushkal-Renardy polynomial for cell complexes*. Preliminary report.

Recently V.Krushkal and D.Renardy generalized the Tutte polynomial from graph to simplicial and cell complexes. We show that evaluation of this polynomial at the origin gives the number of cellular spanning trees in a sense of A.Duval, C.Klivans and J.Martin. Moreover, a slight modification of the Krushkal-Renardy polynomial lead to the weighted cellular spanning trees and therefore can be calculated by the cellular matrix-tree theorem. In the case of cell decomposition of a sphere this modified polynomial also satisfies the duality relation of Krushkal-Renardy. Another evaluation of the Tutte-Krushkal-Renardy polynomial is the Bott polynomials introduced by Raoul Bott in 1952. (Received January 18, 2012)