1030-05-101   **Art Duval*** (`artduval@math.utep.edu`), University of Texas at El Paso, Department of Mathematical Sciences, 500 W. University Ave., El Paso, TX 79968-0514, and **Caroline J. Klivans** and **Jeremy L. Martin**. *A Simplicial matrix-tree theorem, II. Examples.*

We use one form of the generalized simplicial matrix-tree theorem to enumerate the simplicial spanning trees of several families of simplicial complexes: shifted complexes; color-shifted complexes; and independence complexes of matroids. In each case, we either prove or conjecture that the enumerator factors nicely. In particular, we prove that simplicial spanning trees of shifted complexes, with a very fine weighting, can be enumerated equivalently by a deletion-link recursion or by counting faces at the shifted complex's boundary in the Hasse diagram of the componentwise partial order. This generalizes a result of Martin and Reiner for threshold graphs (itself a special case of a result of Remmel and Williamson). The proof relies on computing the eigenvalues of the Laplacian, with an unusual weighting, of shifted complexes, which generalizes a result of Duval and Reiner for eigenvalues of unweighted Laplacians of shifted complexes. We conjecture a formula for the simplicial spanning tree enumerator of complete color-shifted complexes (complete balanced simplicial complexes). This talk will rely on some of the results from the talk by J. Martin, but still be self-contained and independent of that talk. (Received July 24, 2007)