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Jose Alejandro Samper* (samper@math.washington.edu). *Relaxing the exchange axiom and Stanley's conjecture for matroid h-vectors.*

We present a relaxation of the exchange axiom for matroids. This leads to a large class of ordered simplicial complexes that contains all independence complexes of matroids as well as all pure shifted complexes. While the resulting family of simplicial complexes is much larger than that of independence complexes of matroids, the members of this family enjoy a few matroidal properties: for instance, they are vertex decomposable and possess several natural shelling orders. We discuss decompositions of the h-vectors of such a class of complexes and introduce a refinement of Stanley's classical conjecture on the h-vectors of independence complexes of matroids. Finally, we present a solution of this extended conjecture for the class of pure shifted simplicial complexes. (Received September 22, 2015)