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Balanced vertex decomposable simplicial complexes and their h -vectors

Given any finite simplicial complex Δ , I will discuss how to construct a new simplicial complex Δ_χ that is balanced and vertex decomposable and whose h -vector is the f -vector of the original complex. This construction generalizes the "whiskering" construction of Villarreal, and Cook and Nagel. I will also discuss how to reverse this process in the special case of the independence complex of a chordal graph.