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Federico Castillo, Joseph Doolittle, Bennet Goeckner* (goeckner@uw.edu), **Michael Ross**
and **Li Ying**. *Type polytopes and products of simplices.*

For polytopes P and Q , we say that Q is a *weak Minkowski summand* of P if $Q + R = \lambda P$ for some polytope R and scalar λ . The type polytope $\text{Type}(P)$ encodes all of the weak Minkowski summands of P . In general, combinatorially isomorphic polytopes can have different type polytopes. We show that if P is combinatorially isomorphic to a product of simplices, then $\text{Type}(P)$ is a simplex. In particular, the type polytope of any combinatorial cube is a simplex. We also provide constructions of n -gons that maximize the f -vector and n -gons that minimize the f -vector of the type polytope for each n . (Received August 03, 2020)