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Vincent Coll, Matt Hyatt, Andrew W. Mayers and Nicholas W. Mayers*
(nwm215@lehigh.edu). *Counting Seaweed Algebras of Index k* . Preliminary report.

The *index* of a Lie algebra is an important algebraic invariant of the Lie algebra. Here we investigate the index of seaweed (or biparabolic) subalgebras of $\mathfrak{sl}(n)$. Standard “seaweeds” may be parametrized by a pair of compositions of the positive integer n and for all n , and certain $k(n)$, we provide closed-form formulas and the generating functions for $C(n, k)$ – the number of parametrizing pairs which yield a seaweed subalgebra of $\mathfrak{sl}(n)$ of index k . These formulas were conjectured by discerning Pascal-type relations among the $C(n, k)$ and finding a pattern. Though our results are combinatorial in nature, we make use of new Lie algebraic techniques. (Received September 14, 2017)