

1112-05-401 **Jay Pantone*** (jp@dartmouth.edu). *Asymptotics of Permutation Classes and the Method of Differential Approximants.*

When you're unable to find the generating function for a combinatorial sequence, the next best thing is to compute many initial terms. Recently, we've found thousands of initial terms of four permutation classes for which we cannot derive (or even guess) the generating functions.

The Method of Differential Approximants allows one to predict the asymptotic behavior of a combinatorial sequence using only known initial terms. While this technique is well-known in the field of statistical mechanics, we have not seen it used very often in combinatorics. After explaining how the method works, we'll use it to estimate the asymptotic behavior of our four mysterious permutation classes. (Received August 09, 2015)