Asymptotics of Bivariate Analytic Functions with Algebraic Singularities

Torin Greenwood[*1]

[1]Georgia Institute of Technology [Atlanta] – North Avenue, Atlanta, GA 30332, United States

Abstract

In this paper, we use the multivariate analytic techniques of Pemantle and Wilson to find asymptotic for- mulae for the coefficients of a broad class of multivariate generating functions with algebraic singularities. Flajolet and Odlyzko (1990) analyzed the coefficients of a class of univariate generating functions with algebraic singularities. These results have been extended to classes of multivariate generating functions by Gao and Richmond (1992) and Hwang (1996, 1998), in both cases by immediately reducing the multivariate case to the univariate case. Pemantle and Wilson (2013) outlined new multivariate analytic techniques and used them to analyze the coefficients of rational generating functions.

[*]Speaker