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## Analytic Combinatorics in Several Variables

### Robin Pemantle, University of Pennsylvania Mark C. Wilson, University of Auckland

This book is the first to treat the analytic aspects of combinatorial enumeration from a multivariate perspective. Analytic combinatorics is a branch of enumeration that uses analytic techniques to estimate combinatorial quantities: generating functions are defined and their coefficients are then estimated via complex contour integrals. The multivariate case involves techniques well known in other areas of mathematics but not in combinatorics. Aimed at graduate students and researchers in enumerative combinatorics, the book contains all the necessary background, including a review of the uses of generating functions in combinatorial enumeration as well as chapters devoted to saddle point analysis, Groebner bases, Laurent series and amoebas, and a smattering of differential and algebraic topology. All software along with other ancillary material can be located via the book's website, http://www.cs.auckland.ac.nz/~mcw/Research/mvGF/asymultseg/ACSVbook/.

'It deserves a place on college library shelves even if nearly all undergraduates will find it too daunting, for it provides a nearly universal answer to the 'what can I do with this stuff?' question that students pose in so many basic courses. Recommended.' *D. V. Feldman, Choice* 

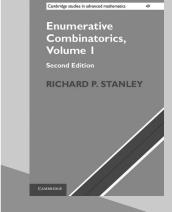
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This volume contains nine survey articles based on the invited lectures given at the 24th British Combinatorial Conference, held at Royal Holloway, University of London in July 2013. This biennial conference is a well-established international event, with speakers from around the world. The volume provides an up-to-date overview of current research in several areas of combinatorics, including graph theory, matroid theory and automatic counting, as well as connections to coding theory and Bent functions. Each article is clearly written and assumes little prior knowledge on the part of the reader. The authors are some of the world's foremost researchers in their fields, and here they summarise existing results and give a unique preview of cutting-edge developments. The book provides a valuable survey of the present state of knowledge in combinatorics, and will be useful to researchers and advanced graduate students, primarily in mathematics but also in computer science and statistics.



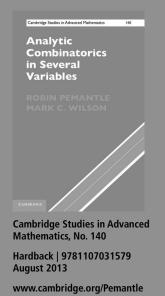
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### Analytic Combinatorics in Several Variables

### Robin Pemantle, University of Pennsylvania

### Mark C. Wilson, University of Auckland

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