



ICECA

International Conference
Enumerative Combinatorics and Applications
University of Haifa – Virtual – August 17-19, 2026

ON REFINEMENTS OF EULER-MAHONIAN STATISTICS FOR MULTIPERMUTATIONS

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Permutation statistics constitute a classical subject in enumerative combinatorics. In the study of the genus zeta function, Denert discovered a new Mahonian statistic on permutations, which is called Denert's statistic by Foata and Zeilberger. A pair of statistics is called *Euler-Mahonian* if it is equidistributed with (des, maj) , where des denotes the descent number and maj denotes the major index. Foata and Zeilberger proved that (exc, den) is Euler-Mahonian over permutations, which was originally conjectured by Denert, where exc denotes the excedance number and den denotes the Denert's statistic. In this talk, we present a unified approach to refining Euler-Mahonian statistics on multipermutations. This approach allows us to generalize several known results in the literature.