Yan, Sherry H. F.; Ling, Sha; Yang, Lihong; Zhou, Robin D. P.
Further extensions of Haglund-Remmel-Wilson identity. (English) [Zbl 07637359]

Summary: MacMahon’s equidistribution theorem states that the permutation statistics inversion number and major index are equidistributed. J. B. Remmel and A. T. Wilson [J. Comb. Theory, Ser. A 134, 242–277 (2015; Zbl 1315.05019)] proved a conjectured identity of Haglund which is an extension of MacMahon’s equidistribution theorem to ordered set partitions. Recently, S. H. Liu [“The Haglund-Remmel-Wilson identity for k-Stirling permutations”, Preprint] extended this identity to k-Stirling permutations and posed a conjecture concerning an ascent analogue of his extension. In this paper, we shall present a combinatorial proof of this conjecture. Furthermore, we derive an analogous result for another maj-like statistic introduced by Liu [loc. cit.].

MSC:
05A18 Partitions of sets
05A05 Permutations, words, matrices
05A15 Exact enumeration problems, generating functions
05C30 Enumeration in graph theory

Keywords:
Stirling permutation; inversion number; major index; MacMahon’s equidistribution theorem

Full Text: DOI

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