Narayanan, Shyam Sivasathya
Resolving two conjectures on staircase encodings and boundary grids of 132 and 123-avoiding permutations. (English) Zbl 1420.05008
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Summary: This paper analyzes relations between pattern avoidance of certain permutations and graphs on staircase grids and boundary grids, and proves two conjectures posed by C. Bean, M. Tannock and H. Ulfarsson [“Pattern avoiding permutations and independent sets in graphs”, Preprint, https://arxiv.org/abs/1512.08155]. More specifically, this paper enumerates a certain family of staircase encodings and proves that the downcore graph, a certain graph established on the boundary grid, is pure if and only if the permutation corresponding to the boundary grid avoids the classical patterns 123 and 2143.

MSC:
05A05 Permutations, words, matrices
05A15 Exact enumeration problems, generating functions

Keywords:
graphs on staircase grids; graphs on boundary grids

Full Text: arXiv Link

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