

SIDE 14.2



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A natural signed bijection between monotone triangles and shifted Gelfand-Tsetlin patterns

Content :

The alternating sign matrices-descending plane partitions (ASM-DPP) bijection problem is one of the most intriguing open problems in integrable combinatorics. Recently, Fischer and Konvalinka have obtained a bijection between $\text{ASM}(n) \times \text{DPP}(n-1)$ and $\text{DPP}(n) \times \text{ASM}(n-1)$ using the notions of a signed set and a signed bijection and which involves an explicit construction of a signed bijection between alternating sign matrices and so-called shifted Gelfand-Tsetlin patterns. Their proof can be considered as a combinatorial proof of the enumeration of ASM. We define the notion of compatibility of a signed bijection to measure its naturalness and we use it to simplify said signed bijection between alternating sign matrices and shifted Gelfand-Tsetlin patterns, thereby providing a better combinatorial proof of the enumeration of ASM.

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