Partially *2*-Colored Permutations and the Boros-Moll Polynomials

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Abstract: We find a combinatorial setting for the coefficients of the Boros-Moll polynomials $P_m(a)$ in terms of partially *2*-colored permutations. Using this model, we give a combinatorial proof of a recurrence relation on the coefficients of $P_m(a)$. This approach enables us to give a combinatorial interpretation of the log-concavity of $P_m(a)$ which was conjectured by Moll and confirmed by Kauers and Paule.

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Keywords: partially *2*-colored permutation, Boros-Moll polynomial, rising factorial, logconcavity, bijection

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