
Continued Classification of 3D Lattice Models in the Positive Octant

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Abstract

We continue the investigations of lattice walks in the three-dimensional lattice restricted to the positive octant. We separate models which clearly have a D-finite generating function from models for which there is no reason to expect that their generating function is D-finite, and we isolate a small set of models whose nature remains unclear and requires further investigation. For these, we give some experimental results about their asymptotic behaviour, based on the inspection of a large number of initial terms. At least for some of them, the guessed asymptotic form seems to tip the balance towards non-D-finiteness.

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