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Combinatorial interpretation of the coefficients of the BDG action

Causal set theory is a model of quantum gravity where the underlying spacetime is a locally finite poset. The Benincasa-Dowker-Glaser (BDG) action is an action on a causal set which corresponds to the classical Einstein-Hilbert action. L.Glaser gave formulas for the coefficients of the BDG action. I will give a combinatorial interpretation for these coefficients in terms of some lattice walks, and explain some consequences. No familiarity with causal set theory is required.