Theory of Computation of Multidimensional Entropy with an Application to the Monomer-Dimer Problem

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November 21, 2003

Abstract

We outline the most recent theory for the computation of the exponential growth rate of the number of configurations on a multi-dimensional grid. As an application we compute the monomer-dimer constant for the 2-dimensional grid to 8 decimal digits, agreeing with the heuristic computations of Baxter, and for the 3-dimensional grid with an error smaller than 1.35%.

2000 Mathematics Subject Classification: 05A16, 28D20, 37M25, 82B20

Keywords and phrases: Topological entropy, subshifts of finite type, monomer-dimer, transfer matrix

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\^{}This author thanks the Institute for Interdisciplinary Applications of Computer Science, The University of Haifa, Haifa, Israel, for partial support.