The Diameter and Chemical Distance of Random Clusters

Don Blair and Jon Machta

Department of Physics, University of Massachusetts, Amherst, MA 01003.

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Abstract

A relatively unexplored geometric property of Potts models clusters is their "diameter", D – the longest shortest path between any two points on the cluster. We report numerical results for the fractal dimension of the diameter, D_{min} and the fractal dimension of the chemical distance, d_{min}, for 2D critical Potts clusters with $q = 1, 2, 3, 4, 5$. We find that $D_{min} = d_{min}$ within numerical error. Test. Test2. Test3.

I. INTRODUCTION

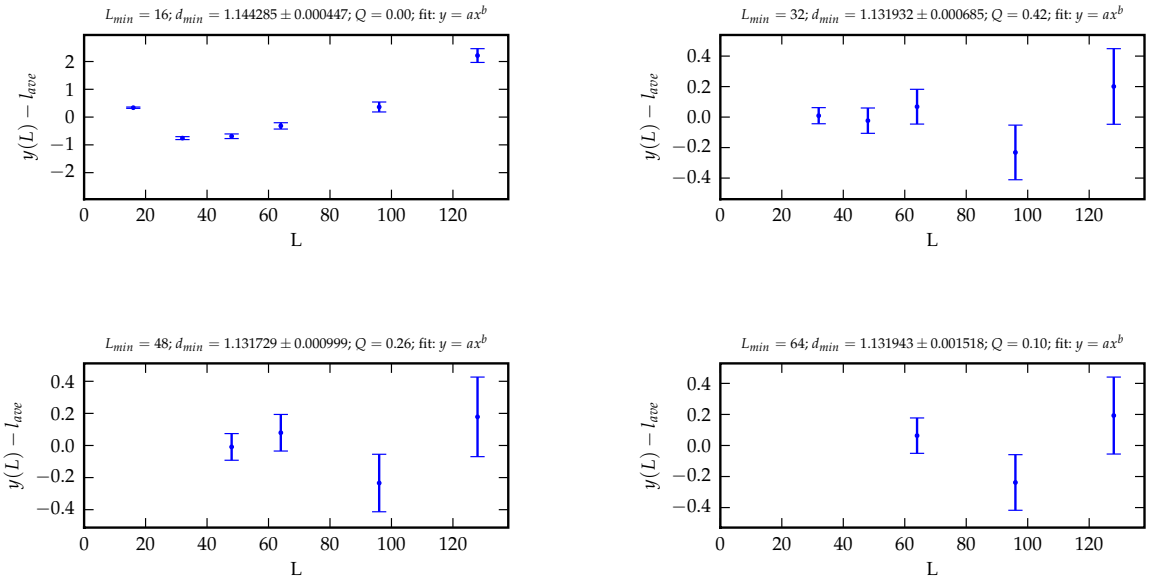

FIG. 1: d_{min} for D=3, q=2