

**PERCOLATION PHASE TRANSITIONS ON DYNAMICALLY GROWN
GRAPHS**

BRADEN HOAGLAND

Thesis submitted to the Department of Mathematics for Honors
Duke University, Durham, NC
April 2022

Acknowledgements

Lorem ipsum dolor sit amet, consectetur adipiscing elit. Ut purus elit, vestibulum ut, placerat ac, adipiscing vitae, felis. Curabitur dictum gravida mauris. Nam arcu libero, nonummy eget, consectetur id, vulputate a, magna. Donec vehicula augue eu neque. Pellentesque habitant morbi tristique senectus et netus et malesuada fames ac turpis egestas. Mauris ut leo. Cras viverra metus rhoncus sem. Nulla et lectus vestibulum urna fringilla ultrices. Phasellus eu tellus sit amet tortor gravida placerat. Integer sapien est, iaculis in, pretium quis, viverra ac, nunc. Praesent eget sem vel leo ultrices bibendum. Aenean faucibus. Morbi dolor nulla, malesuada eu, pulvinar at, mollis ac, nulla. Curabitur auctor semper nulla. Donec varius orci eget risus. Duis nibh mi, congue eu, accumsan eleifend, sagittis quis, diam. Duis eget orci sit amet orci dignissim rutrum.

Abstract

Nam dui ligula, fringilla a, euismod sodales, sollicitudin vel, wisi. Morbi auctor lorem non justo. Nam lacus libero, pretium at, lobortis vitae, ultricies et, tellus. Donec aliquet, tortor sed accumsan bibendum, erat ligula aliquet magna, vitae ornare odio metus a mi. Morbi ac orci et nisl hendrerit mollis. Suspendisse ut massa. Cras nec ante. Pellentesque a nulla. Cum sociis natoque penatibus et magnis dis parturient montes, nascetur ridiculus mus. Aliquam tincidunt urna. Nulla ullamcorper vestibulum turpis. Pellentesque cursus luctus mauris.

Contents

1	Introduction	1
1.1	Percolation Processes	1
1.2	Edge Rules	1
1.3	The Critical Phase Transition	1
2	The Models We Consider	1
3	Scaling Theory	1
3.1	Critical Exponents	1
3.2	Scaling Relations	1
3.3	Uniform Scaling Rules	1
4	Scaling Relation Calculations	1
5	Additional Calculations for Erdős Rényi	1

1 Introduction

1.1 Percolation Processes

1.2 Edge Rules

1.3 The Critical Phase Transition

2 The Models We Consider

3 Scaling Theory

3.1 Critical Exponents

3.2 Scaling Relations

3.3 Uniform Scaling Rules

4 Scaling Relation Calculations

5 Additional Calculations for Erdős Rényi

Bibliography