

Futaba Okamoto

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EDUCATION

- 2007 Ph.D. in Mathematics, Western Michigan University.
Area: Graph Theory
Title of Doctoral Dissertation: Measures of traversability in graphs
Dissertation Advisor: Professor Ping Zhang
- 2005 M.A. in Mathematics, Western Michigan University.
- 2003 B.S. in Mathematics and B.S. in Physics, Western Michigan University.
Graduated: Summa Cum Laude

PROFESSIONAL EXPERIENCE

- 2007 - present Assistant Professor of Mathematics.
Mathematics Department, University of Wisconsin - La Crosse.
- 2005 - 2007 Doctoral Teaching Associate.
The Graduate College, Western Michigan University.
- 2003 - 2005 Graduate Teaching Assistant.
Department of Mathematics, Western Michigan University.
- 2001 - 2003 Undergraduate Teaching Assistant.
Department of Physics, Western Michigan University.

ACTIVITIES RELATED TO RESEARCH

PUBLICATIONS IN REFEREED JOURNALS

1. Set vertex colorings and joins of graphs. F. Okamoto, C. W. Rasmussen, and P. Zhang. *Czechoslovak Mathematical Journal*. **59** (2009) 929-941.
2. The multiset chromatic number of a graph. G. Chartrand, F. Okamoto, E. Salehi, and P. Zhang. *Mathematica Bohemica*. **134** (2009) 191-209.
3. The metric chromatic number of a graph. G. Chartrand, F. Okamoto, and P. Zhang. *Australasian Journal of Combinatorics*. **44** (2009) 273-286.
4. On upper traceable numbers of graphs. F. Okamoto and P. Zhang. *Mathematica Bohemica*. **133** (2008) 389-405.
5. The upper traceable number of a graph. F. Okamoto, V. Saenpholphat, and P. Zhang. *Czechoslovak Mathematical Journal*. **58** (2008) 271-287.

6. A three-color problem in graph theory. H. Escudro, F. Okamoto, and P. Zhang. *Bulletin of the Institute of Combinatorics and its Applications*. **52** (2008) 65-82.
7. Vertex-distinguishing colorings of graphs (a survey of recent developments). H. Escudro, F. Okamoto, and P. Zhang. *AKCE International Journal of Graphs and Combinatorics*. **4** (2007).
8. On γ -labelings of oriented graphs. F. Okamoto, V. Saenpholphat, and P. Zhang. *Mathematica Bohemica*. **132** (2007) 185-203.
9. Graphs with prescribed traceable number and related parameters. F. Okamoto and P. Zhang. *Congressus Numerantium*. **188** (2007) 11-32.
10. On detectable factorizations of regular graphs. H. Escudro, F. Okamoto, and P. Zhang. *Congressus Numerantium*. **185** (2007) 175-186.
11. On the irregular chromatic number of a graph. F. Okamoto, M. Radcliffe, and P. Zhang. *Congressus Numerantium*. **181** (2006) 129-150.
12. A characterization of graphs whose Hamiltonian and upper Hamiltonian numbers differ by 1. F. Okamoto and P. Zhang. *Congressus Numerantium*. **180** (2006) 129-144.
13. Circulants and a three-color conjecture. H. Escudro, F. Okamoto, and P. Zhang. *Congressus Numerantium*. **178** (2006) 33-55.
14. Measures of traceability in graphs. F. Okamoto, V. Saenpholphat, and P. Zhang. *Mathematica Bohemica*. **131** (2006) 63-83.
15. On detectable factorizations of cubic graphs. H. Escudro, F. Okamoto, and P. Zhang. *Journal of Combinatorial Mathematics and Combinatorial Computing*. **56** (2006) 47-63.
16. Detectable colorings of graphs. G. Chartrand, H. Escudro, F. Okamoto, and P. Zhang. *Utilitas Mathematica*. **69** (2006) 13-32.
17. The rainbow connectivities of small cubic graphs. G. L. Johns, F. Okamoto, and P. Zhang. *Ars Combinatoria*. Accepted.
18. A note on graphs with prescribed complete coloring numbers. G. Chartrand, F. Okamoto, Z. Tuza, and P. Zhang. *Journal of Combinatorial Mathematics and Combinatorial Computing*. Accepted.
19. The maximum traceable number of a graph. F. Okamoto. *Ars Combinatoria*. Accepted.
20. A four colorings theorem. G. Chartrand, S. T. Hedetniemi, F. Okamoto, and P. Zhang. *Ars Combinatoria*. Accepted.
21. Detour antipodal graphs. G. L. Johns, F. Okamoto, and P. Zhang. *Journal of Combinatorial Mathematics and Combinatorial Computing*. Accepted.
22. Neighborhood-rainbow colorings of graphs. F. Okamoto, B. Phinezy, and P. Zhang. *Congressus Numerantium*. Accepted.
23. The total traceable number of a graph. F. Okamoto and P. Zhang. *Utilitas Mathematica*. Accepted.
24. The set chromatic number of a graph. G. Chartrand, F. Okamoto, C. W. Rasmussen, and P. Zhang. *Discussiones Mathematicae Graph Theory*. Accepted.
25. A note on bounds for the maximum traceable number of a graph. F. Okamoto. *Ars Combinatoria*. Accepted.

26. A checkerboard problem and modular colorings of graphs. F. Okamoto, E. Salehi, and P. Zhang. *Bulletin of the Institute of Combinatorics and Its Applications*. Accepted.
27. Neighbor-distinguishing vertex colorings of graphs. G. Chartrand, F. Okamoto, and P. Zhang. *Journal of Combinatorial Mathematics and Combinatorial Computing*. Accepted.
28. On multiset colorings of graphs. F. Okamoto, E. Salehi, and P. Zhang. *Discussiones Mathematicae Graph Theory*. Accepted.
29. The tree connectivity of regular complete bipartite graphs. F. Okamoto and P. Zhang. *Journal of Combinatorial Mathematics and Combinatorial Computing*. Accepted.
30. Rainbow trees in graphs and generalized connectivity. G. Chartrand, F. Okamoto, and P. Zhang. *Networks*. Accepted.
31. On local metric dimensions of graphs. F. Okamoto, B. Phinezy, and P. Zhang. *Journal of Combinatorial Mathematics and Combinatorial Computing*. Accepted.
32. Results and open problems on Hamiltonian labelings of graphs. F. Okamoto, W. Renzema, and P. Zhang. *Congressus Numerantium*. Accepted.
33. A note on graphs with prescribed order and rainbow index. F. Okamoto and P. Zhang. *Congressus Numerantium*. Accepted.
34. Realizing lattice points in 3-space as the chromatic numbers of three factors of a complete graph. F. Okamoto and C. W. Rasmussen. *Congressus Numerantium*. Accepted.
35. On the nonplanarity of powers of paths. G. Chartrand, F. Okamoto, and P. Zhang. *Utilitas Mathematica*. Accepted.
36. On modular colorings of caterpillars. F. Okamoto, E. Salehi, and P. Zhang. *Congressus Numerantium*. Accepted.
37. Set colorings in perfect graphs. R. Gera, F. Okamoto, C. W. Rasmussen, and P. Zhang. *Mathematica Bohemica*. Accepted.

GRANTS

- 2007 - 2008 Project NExT Fellowship.
The Mathematical Association of America.
- 2007 Graduate Research Travel Grant.
The Graduate College, Western Michigan University.
- 2006 E. A. Nordhaus Travel Grant.
Department of Mathematics, Western Michigan University.
- Graduate Research Travel Grant.
The Graduate College, Western Michigan University.

PRESENTATIONS AT PROFESSIONAL MEETINGS

1. The local metric dimension of a graph.
The 23rd Midwest Conference on Combinatorics, Cryptography, and Computing (MCCCC).
Rochester Institute of Technology, Rochester, NY. October 3, 2009.
2. Powers of paths and planarity.
The 40th Southeastern International Conference on Graph Theory, Combinatorics and Computing.
Florida Atlantic University, Boca Raton, FL. March 2, 2009.

3. Rainbow Colorings and Rainbow Connectivity of Graphs.
University of Louisville, KY. February 18, 2009.
4. The rainbow index of a graph.
The Joint Mathematics Meetings. Washington, D.C. January 8, 2009.
5. Rainbow trees in graphs.
The 22nd Midwest Conference on Combinatorics, Cryptography, and Computing (MCCCC).
University of Nevada Las Vegas, NV. October 22, 2008.
6. Three colorings in graphs.
MathFest. Madison, WI. July 31, 2008.
7. The rainbow connectivity of regular graphs.
SIAM Conference on Discrete Mathematics. University of Vermont, VT. June 19, 2008.
8. A four colorings theorem.
The 39th Southeastern International Conference on Graph Theory, Combinatorics and Computing.
Florida Atlantic University, Boca Raton, FL. March 3, 2008.
9. Rainbow connectivities of graphs.
The Joint Mathematics Meetings, San Diego, CA. January 9, 2008.
10. On measures of traceability in graphs.
The 38th Southeastern International Conference on Graph Theory, Combinatorics and Computing.
Florida Atlantic University, Boca Raton, FL. March 5, 2007.
11. From a banquet seating problem to a graph coloring problem.
Louisiana State University Shreveport, LA. February 8, 2007.
12. From a banquet seating problem to a graph coloring problem.
University of Wisconsin - La Crosse, WI. January 29, 2007.
13. From a banquet seating problem to a graph coloring problem.
The Joint Mathematics Meetings, New Orleans, LA. January 7, 2007.
14. Hamiltonian walks in graphs.
Michigan MAA & MichMATYC 2006 Annual Meeting.
Calvin College, Grand Rapids, MI. May 6, 2006.
15. Measures of traceability in graphs.
The 37th Southeastern International Conference on Graph Theory, Combinatorics and Computing.
Florida Atlantic University, Boca Raton, FL. March 6, 2006.

CONFERENCES, SEMINARS, AND WORKSHOPS ATTENDED

2009 The Joint Mathematics Meetings. Washington, D.C. January 2009.

The 40th Southeastern International Conference on Graph Theory, Combinatorics and Computing.
Florida Atlantic University, Boca Raton, FL. March 2009.

The 77th Annual Meeting of MAA/Wisconsin Section. University of Wisconsin - La Crosse, La Crosse,
WI. April 2009.

The 23rd Midwest Conference on Combinatorics, Cryptography, and Computing (MCCCC). Rochester
Institute of Technology, NY. October 2009.

2008 The Joint Mathematics Meetings. San Diego, CA. January 2008.

The Project NExT Workshop. San Diego, CA. January 2008.

The 39th Southeastern International Conference on Graph Theory, Combinatorics and Computing. Florida Atlantic University, Boca Raton, FL. March 2008.

SIAM Conference on Discrete Mathematics. University of Vermont, VT. June, 2008.

The Project NExT Workshop. Madison, WI. August 2008.

MathFest. Madison, WI. August 2008.

The 22nd Midwest Conference on Combinatorics, Cryptography, and Computing (MCCCC). University of Nevada Las Vegas, NV. October 2008.

2007 The Joint Mathematics Meetings. New Orleans, LA. January 2007.

The 38th Southeastern International Conference on Graph Theory, Combinatorics and Computing. Florida Atlantic University, Boca Raton, FL. March 2007.

The Project NExT Workshop. San Jose State University, CA. August 2007.

MathFest. San Jose, CA. August 2007.

Wisconsin Section NExT Fall Workshop. Menomonie, WI. September 2007.

2006 The 37th Southeastern International Conference on Graph Theory, Combinatorics and Computing. Florida Atlantic University, Boca Raton, FL. March 2006.

Michigan MAA & MichMATYC 2006 Annual Meeting. Calvin College, Grand Rapids, MI. May 2006.

ACTIVITIES RELATED TO INSTRUCTION

MTH 461	Mathematical Physics, University of Wisconsin - La Crosse.
MTH 317	Graph Theory, University of Wisconsin - La Crosse.
MTH 207	Calculus I, University of Wisconsin - La Crosse.
MTH 175	Applied Calculus, University of Wisconsin - La Crosse.
MTH 150	College Algebra, University of Wisconsin - La Crosse.
MATH 4400	Graphs and Mathematical Models, Western Michigan University.
MATH 2000	Applied Calculus, Western Michigan University.
MATH 1450	Discrete Mathematical Structures, Western Michigan University.
MATH 1220	Calculus I, Western Michigan University.
MATH 1180	Precalculus, Western Michigan University.
MATH 1110	Algebra II, Western Michigan University.
PHYS 1030	Sky and Solar System Lab, Western Michigan University.
PHYS 1050	Stars and Galaxies Lab, Western Michigan University.

BOOK REVIEWS

2007 Reviewer of book : *Mathematical Proofs: A Transition to Advanced Mathematics* (by G. Chartrand, A. D. Polimeni, and P. Zhang), published by Addison-Wesley.

JOURNALS REFEREED FOR

Journal of Combinatorial Mathematics and Combinatorial Computing.
Journal of Inequalities in Pure and Applied Mathematics.
Asian-European Journal of Mathematics.
Mathematical and Computer Modelling.

SERVICES

2009 - 2010 Research Seminar Organizer.
Mathematics Department, University of Wisconsin - La Crosse.
International Education Committee, member.
University of Wisconsin - La Crosse.

2008 - 2009 Search and Screen Committee, member.
Mathematics Department, University of Wisconsin - La Crosse.
Joint Minority Affairs Committee, member.
University of Wisconsin - La Crosse.

2007 - 2008 International Student Organization, faculty advisor.
University of Wisconsin - La Crosse.

2006 - 2007 Teaching Assistant Mentor.
Department of Mathematics, Western Michigan University.
Graph Theory Seminar Co-director.
Department of Mathematics, Western Michigan University.

HONORS AND AWARDS

2008 The 2008 Kirkman Medal.
The Institute of Combinatorics and its Applications.

2007 Graduate Research and Creative Scholar Award.
The Graduate College, Western Michigan University.
Department Graduate Research Scholar Award.
Department of Mathematics, Western Michigan University.

2006 Charles H. Butler Excellence in Teaching Award.
Department of Mathematics, Western Michigan University.

2003 Western Michigan University Presidential Scholar Award in Physics.

2002 Western Michigan University Presidential Scholar Award in Mathematics.
A. Bruce Clarke Senior Award.
Department of Mathematics, Western Michigan University.
Nathan Nichols Physics Scholarships.
Department of Physics, Western Michigan University.

- Wilcox Memorial Award.
Department of Physics, Western Michigan University.
- 2001 Fred A. Beeler Memorial Scholarship. (twice)
Department of Mathematics, Western Michigan University.
- Robert Meagher Memorial Scholarship.
Department of Mathematics, Western Michigan University.
- 2000 - 2001 Paul Rood Scholarship. (4 times)
Department of Physics, Western Michigan University.
- 2000 Freshman-Sophomore Prize Competition Award.
Department of Mathematics, Western Michigan University.
- 1999 - 2002 Top Student Award in Physics. (5 times)
Department of Physics, Western Michigan University.

PROFESSIONAL AFFILIATIONS

The Institute of Combinatorics and its Applications since 2008.

American Mathematical Society since 2006.

Association for Women in Mathematics since 2006.

Mathematical Association of America since 2006.

Pi Mu Epsilon National Honorary Mathematics Society since 2002.