

CURRICULUM VITAE

for

Manouchehr Zaker

DATE OF BIRTH: September 19, 1971

POSITION: Associate Professor of Mathematics

CURRENT ADDRESS

Institute for Advanced Studies in Basic Sciences (IASBS)
Department of Mathematics, 45195–1159, Zanjan, IRAN.
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EDUCATION

University of Tabriz, Tabriz,
Bachelor of Science in pure mathematics in 1994.

Sharif University of Technology, Tehran,
Master of Science in pure mathematics in 1997.

M.S.thesis:

Defining sets in vertex coloring of graphs and Latin rectangles

Sharif University of Technology, Tehran,
Ph.D. in mathematics in 2001.

Major field: Combinatorics and Graph Thoery

Minor field: Advanced Algorithms and Computational Complexity

Ph.D. thesis:

On-line Greedy Colorings and Grundy Number of Graphs

Supervisor: Professor E. S. Mahmoodian.

HONORS

- Outstanding graduate student in Sharif University of Technology 2001 (The first rank in Mathematics Department)
- Invited speaker in: The international workshop/conference on Combinatorics, Linear Algebra and Graph Coloring, Aug 9–14 2003 Institute for Studies in Theoretical Physics and Mathematics (IPM), (Tehran, 2003)
- Reception of IPM(Tehran)-Orsay(Paris) research grant (for one month) in 2004 (this grant was based on a contract between France and Iran)

TEACHING

- Graph Theory for graduate level (References: Graph Theory by R. Diestel and An Introduction to Graph Theory by D. West)
- Probabilistic Graph Theory for graduate level (References: The Probabilistic Methods by Alon and Spencer and Graph Colouring and the Probabilistic Method by M. Molloy and B. Reed)
- Coding theory for graduate level (Reference: Coding and Information Theory by S. Roman)
- Cryptography for graduate level (Reference: Cryptography: Theory and Practice by D. Stinson)

VISITS & GRANTS

- From November 16 to 20 (2004) at the Institute Leibniz, IMAG, Grenoble, France (invited visitor).
- From November 20 to December 21 (2004) at Institute LRI, University of Paris-Sud, Orsay, Paris, based on a research grant from French government.
- From September 12 to 24 (2005) at the Advanced School on Recent Trends in Combinatorics, held in the institute CRM, Barcelona-Spain, financially supported by the European Mathematical Society.
- From September 7 to 10 (2006) at Koc university in Istanbul, Turkey (invited visitor).

- From September 18 to 21 (2006) at Gdansk technical university, Poland (invited visitor).
- From June 24 to 30 (2007) at the Conference Enumeration and Probabilistic Methods in Combinatorics, held in the institute CRM Barcelona-Spain, financially supported by the CRM.
- From October 21 to 27 (2007) at ADONET - CIRM School on Graphs and Algorithms, held in Bellavista, Trento, Italy, financially supported by CIRM.

PUBLICATIONS

1. E.S. Mahmoodian, R. Naserasr, and M. Zaker, *Defining sets in vertex colorings of graphs and Latin rectangles*, Discrete Mathematics **167/168** (1997) 451–460.
2. H. Hajiabolhassan, M.L. Mehrabadi, R. Tuserkani, and M. Zaker, *A characterization of uniquely vertex colorable graphs using minimal defining sets*, Discrete Mathematics **199** (1999) 233–236.
3. M. Zaker, *Greedy defining sets of graphs*, Australasian Journal of Combinatorics, **23** (2001) 231–235.
4. M. Zaker, *The Grundy chromatic number of the complement of bipartite graphs*, Australasian Journal of Combinatorics, **31** (2005) 325–330.
5. M. Zaker, *Results on the Grundy chromatic number of graphs*, Discrete Mathematics **306** (2006) 3166–3173.
6. M. Kouider and M. Zaker, *Bounds for the b-chromatic number of some families of graphs*, Discrete Mathematics **306** (2006) 617–623.
7. M. Zaker, *Greedy defining sets in graphs and Latin squares*, Electronic Notes in Discrete Mathematics **24** (2006) 299–302.
8. M. Zaker, *Maximum transversal in partial Latin squares and rainbow matchings*, Discrete Applied Mathematics **155** (2007) 558–565.
9. M. Zaker, *Inequalities for the Grundy chromatic number of graphs*, Discrete Appl. Math. **155** (2007), 2567–2572.
10. M. Zaker, *Greedy defining sets in Latin squares*, Ars Combinatoria **89** November (2008).
11. M. Zaker, *New bounds for the chromatic number of graphs*, Journal of Graph Theory **58** (2008) 110–122.
12. M. Zaker, *Extensions to λ -coloring of graphs with emphasis on $K_n \square K_n$* , Submitted.
13. M. Zaker, *First-Fit coloring of graphs without an even cycle*, submitted.
14. M. Zaker, *On lower bounds for chromatic number*, under revision for publica-

tion.

15. M. Zaker, *More results in greedy defining sets*, accepted for publication in *Ars Combin.*

16. M. Zaker, *The chromatic number of graphs and book size*, Submitted.

REFEREED PAPERS FOR JOURNALS

- Discrete Mathematics (USA)
- Discrete Applied Mathematics (USA)
- Discrete Mathematics and Theoretical Computer Science (FRANCE)
- Journal of Combinatorial Designs (USA)
- Journal of Graph Theory (USA)
- Australasian Journal of Combinatorics (AUSTRALIA)

CONFERENCE TALKS

1. *Minimal defining sets in vertex coloring of graphs*, Proceeding of the 28th Annual Iranian Mathematics Conference, Part 1 (Tabriz, 1997), 587–589, Tabriz Univ. Ser., 377, Tabriz Univ., Tabriz, 1997.

2. *New trends in graph colorings concerning greedy coloring*, Proceeding of the 31th Annual Iranian Mathematics Conference, (Tehran, 2000), Tehran.

3. *A variation of subgraph isomorphism problem and its applications*, Proceeding of Second Joint Seminar on Applied Mathematics organized by Baku State University and Zanzan University, (Zanzan, 2000).

4. *Results and problems in Grundy and First-Fit coloring of graphs*, Invited speaker at the international workshop/conference on Combinatorics, Linear Algebra and Graph Coloring, Aug 9–14 2003 Institute for Studies in Theoretical Physics and Mathematics (IPM), (Tehran, 2003).

5. *Results on some coloring parameters of a graph*, The Fourteenth workshop on Cycles and Colourings (C&C05), Sept. 4–9 2005, Tatranska Strba, Slovakia.

6. *Bounds for the chromatic number of graphs*, IPM Combinatorics II, April 22–27 2006 Institute for Studies in Theoretical Physics and Mathematics (IPM), (Tehran, 2006).

7. *Greedy defining sets in graphs and Latin squares*, Fifth Cracow Conference on Graph Theory, Sept. 11–15 2006, Ustron, Poland.

8. *Results in the Chromatic and First Fit Chromatic Number of Sparse Graphs*, Enumeration and Probabilistic Methods in Combinatorics, June 25–29 2007, Barcelona,

Spain.

9. *Lower and upper bounds for the chromatic number of graphs and some open problems*, Graph Theory 2008, August 17–23 2008, Sandbjerg Manor, Denmark.