

## Publications

**Prof. Dr. Jochen Harant**

## Theses

1. J. Harant, *Eine Klasse von hamiltonschen Graphen*, Diplomarbeit, TH Ilmenau, 1980.
2. J. Harant, *Über den Shortness Exponent regulärer Polyedergraphen mit genau zwei Typen von Elementarflächen*, Dissertation, TH Ilmenau, 1982.
3. J. Harant, *Über leichte und schwere Probleme der Verkehrsoptimierung*, Habilitation, TH Ilmenau, 1987.

## Journal Articles

1. Über Abstandsparameter in Polyedergraphen (with H. Walther), *Wiss. Z. TH Ilmenau* 25(1979)No. 2, 31-39.
2. On the Radius of Graphs (with H. Walther), *Journ. of Comb. Theory*, Series B 30 No. 1 (1981)113-117.
3. Ein Partitionierungsalgorithmus zur Distanzberechnung auf Verkehrsnetzen (with K.-H. Elster and H. Hutschenreuther), *Math. Operationsforsch. u. Statist., ser. optimization* 15 (1984) No. 3, 429-438.
4. Mitteilung zu mathematischen Problemen der Verkehrsoptimierung. 1. Mitteilung (with G. Ehnert and H. Walther), *Wiss. Z. TH Ilmenau* 30 (1984)No. 6, 29-32.

5. Ein Durchlaufungsproblem beim Layoutentwurf von Schaltkreisen, *Wiss. Z. TH Ilmenau* 31 (1985)No. 1, 37-38.
6. Mitteilungen zu Mathematischen Problemen der Verkehrsoptimierung. 2. Mitteilung (with G. Ehnert and H. Walther), *Wiss. Z. TH Ilmenau* 32 (1986)No. 3, 39-43.
7. Some new results about the shortness exponent in polyhedral graphs (with H. Walther), *Casopis pestovani matematiky*, 122 (1987) 2, 114-122.
8. On a Problem Concerning Longest Circuits in Polyhedral Graphs (with H. Walther), *Annals of Discrete Mathematics* 41(1989)211-220.
9. On the circumference of regular polyhedra graphs (with H. Walther), *Topics in Combinatorics and Graph theory*, ed. R. Bodendiek, R. Henn, Physica-Verlag Heidelberg 1990, 319-330.
10. An upper bound for the radius of a 3-connected planar graph with bounded faces. In: R. Bodendiek, *Contemporary methods in graph theory*, BI-Wissenschaftsverlag, 1990, 353-358.
11. Toughness and nonhamiltonicity of polyhedral graphs, *Discrete Mathematics* 113(1993)249-253.
12. An upper bound for the radius of a 3-connected graph, *Discrete Mathematics* 122(1993)335-341.
13. A lower bound for the shortness coefficient of a class of graphs (with H. Walther), *Discrete Applied Mathematics* 51(1994)103-105.
14. Non-hamiltonian 5/4-tough maximal planar graphs (with P.J. Owens), *Discrete Mathematics* 147(1995)301-305.
15. 5-regular 3-polytopal graphs with edges of only two types and shortness exponents (with P. Owens, M. Tkáč, and H. Walther), *Discrete Mathematics* 150(1996)143-153.
16. On minimal number of separating 3-cycles in non-hamiltonian maximal planar graphs (with Th. Böhme and M. Tkáč), *Tatra Mountains Mathematical Publications* 9(1996)97-102.

17. A lower bound on the independence number of a graph, *Discrete Mathematics* 188(1998)239-243.
18. On Hamiltonian cycles in 4- and 5-connected plane triangulations (with Th. Böhme), *Discrete Mathematics* 191(1998)25-30.
19. A planarity criterion for cubic bipartite graphs (with Th. Böhme, A. Pruchnewski, and I. Schiermeyer), *Discrete Mathematics* 191(1998)31-43.
20. On certain Hamiltonian cycles in planar graphs (with Th. Böhme and M. Tkáč), *Journal of Graph Theory* 32(1999)81-96.
21. On 3-connected plane graphs without triangular faces (with S. Jendrol and M. Tkáč), *Journ. of Comb. Theory, Series B* 77(1999)150-161.
22. More than one tough chordal planar graphs are Hamiltonian (with Th. Böhme and M. Tkáč), *Journal of Graph Theory* 32(1999)405-410.
23. On dominating sets and independent sets of graphs (with A. Pruchnewski and M. Voigt), *Combinatorics, Probability and Computing* 8(1999)547-553.
24. Some news about the independence number of a graph, *Discussiones Mathematicae Graph Theory* 20, no. 1(2000)71-80.
25. On weights of induced paths and cycles in claw-free and  $K_{1,r}$ -free graphs (with S. Jendrol, B. Randerath, Z. Ryjacek, I. Schiermeyer, and M. Voigt), *Journal of Graph Theory* 36(2001)131-143.
26. On the independence number of a graph in terms of order and size (with I. Schiermeyer), *Discrete Mathematics* 232(2001)131-138.
27. Menger's Theorem (with Th. Böhme, and F. Göring), *Journal of Graph Theory* 37(2001)35-36.
28. A Note on the Domination Number of a Bipartite Graph (with A. Pruchnewski), *Annals of Combinatorics* 5(2001)175-178.
29. Separating 3-cycles in plane triangulations (with M. Hornak and Z. Skupien), *Discrete Mathematics* 239(2001)127-136.

30. A note on domination in bipartite graphs (with T. Gerlach), *Discussiones Mathematicae Graph Theory* 22(2002)229-231.
31. Forbidden subgraphs implying the MIN-algorithm gives a maximum independent set (with Z. Ryjacek and I. Schiermeyer), *Discrete Mathematics* 256(2002)193-201.
32. Paths of low weight in planar graphs (with I. Fabrici and S. Jendrol), *Discussiones Mathematicae Graph Theory* 28(2008)121-135.
33. On short cycles through prescribed vertices of a graph (with F. Göring, E. Hexel, and Zs. Tuza), *Discrete Mathematics* 286(2004)67-74.
34. On paths and cycles through specified vertices, *Discrete Mathematics* 286(2004)95-98.
35. On cycles through specified vertices (with T. Gerlach, F. Göring, and M. Tkáč), *Discrete Mathematics* 306(2006)831-835.
36. On domination in graphs (with F. Göhring), *Discussiones Mathematicae Graph Theory* 25(2005)7-12.
37. On a cycle through a specified linear forest of a graph (with T. Gerlach), *Discrete Mathematics* 307(2007)892-895.
38. On double domination in graphs (with M. A. Henning), *Discussiones Mathematicae Graph Theory* 25(2005)29-34.
39. On cycles through a set of specified vertices (with T. Gerlach). Studies of the University of Zilina (Slovakia), *Mathematical Series*, Vol. 16(2003)35-46.
40. A realization algorithm for double domination in graphs (with M. A. Henning), *Utilitas Mathematica* 76(2008)11-24.
41. On long cycles through four prescribed vertices of a polyhedral graph (with S. Jendrol and H. Walther), *Discussiones Mathematicae Graph Theory* 28(2008)441-451.
42. On the existence of specific stars in planar graphs (with S. Jendrol), *Graphs and Combinatorics* 23(2007)529-543.

43. A lower bound on the independence number of a graph in terms of degrees (with I. Schiermeyer), *Discussiones Mathematicae Graph Theory* 26(3)(2006)431-437.
44. A generalization of Tutte's Theorem on hamiltonian cycles in planar graphs (with S. Senitsch), *Discrete Mathematics* 309(2009)4949-4951.
45. Domination in bipartite graphs (with D. Rautenbach), *Discrete Mathematics* 309(2009)113-122.
46. The independence Number in Graphs of Maximum Degree Three (with M. A. Henning, D. Rautenbach, and I. Schiermeyer), *Discrete Mathematics* 308(2008) 5829-5833.
47. Locally dense independent sets in regular graphs of large girth - An example of a new approach (with F. Göring, D. Rautenbach, and I. Schiermeyer), in *Research Trends in Combinatorial Optimization*, Springer-Verlag Berlin Heidelberg (2008)163-183.
48. On F-independence in graphs (with F. Göring, D. Rautenbach, and I. Schiermeyer), *Discussiones Mathematicae Graph Theory* 29(2009)377-383.
49. Random procedures for dominating sets in graphs (with S. Artmann, F. Göring, D. Rautenbach, and I. Schiermeyer), *Electron. J. Comb.* 17(2010)R102.
50. Closures, cycles and paths (with A. Kemnitz, A. Saito, and I. Schiermeyer), *Journal of Graph Theory*, 69(2012)314-323.
51. Packing edge-disjoint cycles in graphs and the cyclomatic number (with D. Rautenbach, P. Recht, and F. Regen), *Discrete Mathematics* 310(2010)1456-1462.
52. Hamiltonian cycles through prescribed edges of at least 4-connected maximal planar graphs (with F. Göring), *Discrete Mathematics* 310(2010) 1491-1494.
53. Random procedures for dominating sets in bipartite graphs (with S. Artmann), *Discussiones Mathematicae Graph Theory* 30(2)(2010)277-288.

54. Upper bounds on the sum of powers of the degrees of a simple planar graph (with S. Jendrol and T. Madaras), *Journal of Graph Theory* 67(2011)112-123.
55. Packing disjoint cycles over vertex cuts (with D. Rautenbach, P. Recht, I. Schiermeyer, and E.-M. Sprengel), *Discrete Mathematics* 310(2010)1974-1978.
56. Independence in Connected Graphs (with D. Rautenbach), *Discrete Applied Mathematics* 159(2011)79-86.
57. Nonrepetitive vertex colorings of graphs (with S. Jendrol'), *Discrete Mathematics* 312(2012)374-380.
58. A Lower Bound on Independence in Terms of Degrees, *Discrete Applied Mathematics* 159(2011)966-970.
59. Prescribed edges and forbidden edges for a cycle in a planar graph (with F. Göring), *Discrete Applied Mathematics* 161(2013)1734-1738.
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61. The Potential of Greed for Independence (with P. Borowiecki, F. Göring, and D. Rautenbach), *Journal of Graph Theory* 71(2012)245-259.
62. A Note on Barnette's Conjecture, *Discussiones Mathematicae Graph Theory* 33(1)(2013)133-137.
63. On degree sums of a triangle-free graph (with S. Brandt and S. Pflugradt), *Discrete Mathematics* 337(2014)76-82.
64. A note on vertex colorings of plane graphs (with I. Fabrici, S. Jendrol, and R. Sotak), *Discussiones Mathematicae Graph Theory* 34(2014)849-855.
65. A new eigenvalue bound for independent sets (with S. Richter), *Discrete Mathematics* 338(2015)1763-1765.

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67. Eigenvalue conditions for induced subgraphs (with J. Niebling and S. Richter), *Discussiones Mathematicae Graph Theory* 35(2015)355-363.
68. Maximum weighted induced subgraphs (with S. Mohr), *Discrete Mathematics* 339(2016)1954-1959.
69. On Longest Cycles in Essentially 4-connected Planar Graphs (with I. Fabrici and S. Jendrol'), *Discussiones Mathematicae Graph Theory* 36(2016)565-575.
70. Lower bounds on the choice number of a graph (with A. Kemnitz), *Electronic Notes in Discrete Mathematics* 53(2016)421-431.
71. On Selkow's Bound on the Independence Number of Graphs (with S. Mohr), *Discussiones Mathematicae Graph Theory*, 39(2019)655-657.
72. Lightweight Paths in Graphs (with S. Jendrol'), *Opuscula Math.* 39, no. 6(2019)829-837.
73. Longer cycles in essentially 4-connected planar graphs (with I. Fabrici, S. Mohr, and J.M. Schmidt), *Discussiones Mathematicae Graph Theory* 40(2020)269-277.
74. On the Circumference of Essentially 4-connected Planar Graphs (with I. Fabrici, S. Mohr, and J.M. Schmidt), *Journal of Graphs Algorithms and Applications*, 24(2020)21-46.
75. Long Cycles and Spanning Subgraphs of Locally Maximal 1-planar Graphs (with I. Fabrici, T. Madaras, S. Mohr, R. Sotak, C. T. Zamfirescu), *Journal of Graph Theory* 95(2020)125-137.
76. Rooted Minors and Locally Spanning Subgraphs (with T. Böhme, M. Kriesell, S. Mohr, and J.M. Schmidt), submitted.
77. Circumference of Essentially 4-connected Planar Triangulations (with I. Fabrici, S. Mohr, and J.M. Schmidt), submitted.

78. New Bounds on Domination and Independence in Graphs (with S. Mohr), submitted.