

Ryan Martin

Publications & Talks

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Submitted publications:

- [34] L. Kramer, R. Martin and M. Young, On diamond-free subsets of the Boolean lattice, submitted, 22pp. [arXiv]
- [33] R. Martin and J. Smith, Induced saturation number, submitted, 14pp. [arXiv]
- [32] R. Martin, The edit distance function and symmetrization, submitted, 24pp. [arXiv]
- [31] R. Martin and Y. Zhao, Tiling tripartite graphs with 3-colorable graphs: The extreme case, submitted, 29pp. [arXiv]
- [30] R. Martin, On the computation of edit distance functions, submitted, 20pp. [arXiv]
- [29] R. Martin and T. McKay, On the edit distance from $K_{2,t}$ -free graphs, submitted, 19pp. [arXiv]

Publications to appear:

- [28] M. Axenovich and R. Martin, Multicolor and directed edit distance, *J. Comb.*, to appear, 25pp. [arXiv]

Journal publications:

- [27] M. Axenovich, R. Martin and J. Manske, Q_2 -free families in the Boolean lattice, *Order* **29**(1) (2012), pp. 177–191. [arXiv]
- [26] A. Csernenszky, R. Martin and A. Pluhár, On the complexity of Chooser-Picker positional games, *Integers* **11** (2011), Research Paper G2, 16pp. (electronic). [PrePrint]
- [25] R. Martin and B. Stanton, Lower bounds for identifying codes in some infinite grids, *Electron. J. Combin.* **17**(1) (2010), Research Paper 122, 16pp. (electronic). [PrePrint]
- [24] T. Hall, L. Hogben, R. Martin and B. Shader, Expected values of parameters associated with the minimum rank of a graph, *Linear Algebra Appl.* **433**(1) (2010), pp. 101–117. [Journal Copy]
- [23] R. Martin and Y. Zhao, Tiling tripartite graphs with 3-colorable graphs, *Electron. J. Combin.* **16**(1) (2009), Research Paper 109, 16pp. (electronic). [Journal Copy]
- [22] J. Balogh, R. Martin and A. Pluhár, The diameter game, *Random Structures Algorithms* **35**(3) (2009), pp. 369–389. [Journal Copy]
- [21] J. Balogh and R. Martin, On Avoider-Enforcer games, *SIAM J. Discrete Math.* **23**(2) (2009), pp. 901–908. [Journal Copy]
- [20] M. Axenovich, A. Kézdy and R. Martin, On the editing distance of graphs, *J. Graph Theory* **58**(2) (2008), pp. 123–138. [Journal Copy]
- [19] J. Balogh and R. Martin, Edit distance and its computation, *Electron. J. Combin.* **15**(1) (2008), Research Paper 20, 27pp. (electronic). [Journal Copy]
- [18] M. Axenovich and R. Martin, Avoiding rainbow induced subgraphs in vertex-colorings, *Electron. J. Combin.* **15**(1) (2008), Research Paper 12, 23pp. (electronic). [Journal Copy]
- [17] R. Martin and E. Szemerédi, Quadripartite version of the Hajnal-Szemerédi Theorem, *Discrete Math.* **308**(19) (2008), 4337–4360. [OffPrint] [Journal Copy]

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Publications (cont.)

Journal publications (cont.):

- [16] M. Axenovich and R. Martin, On weighted Ramsey numbers, *Australas. J. Combin.* **38** (2007), 179–194. [PrePrint]
- [15] A. Frieze, R. Martin, J. Moncel, M. Ruzinkó and C. Smyth, Codes identifying sets of vertices in random networks, *Discrete Math.* **307**(10) (2007), 1094–1107. [Journal Copy]
- [14] T. Bohman, A. Frieze, R. Martin, M. Ruzinkó and C. Smyth, On randomly generated intersecting hypergraphs II, *Random Structures Algorithms* **30**(1) (2007), 17–34. [Journal Copy]
- [13] M. Axenovich and R. Martin, Sub-Ramsey numbers for arithmetic progressions, *Graphs Combin.* **22**(3) (2006), 297–309. [Journal Copy]
- [12] M. Axenovich and R. Martin, A note on short cycles in a hypercube, *Discrete Math.* **306**(18) (2006), 2212–2218. [Journal Copy]
- [11] M. Axenovich and R. Martin, Avoiding patterns in matrices via a small number of changes, *SIAM J. Discrete Math.*, **20**(1) (2006), 49–54. [Journal Copy]
- [10] M. Axenovich and R. Martin, On the strong chromatic number, *SIAM J. Discrete Math.* **20**(3) (2006), 741–747. [Journal Copy]
- [9] R. Martin, A note on a conjecture of Gyárfás, *Ars Combin.* **79** (2006), 311–317. [PrePrint]
- [8] T. Bohman, A. Frieze, M. Krivelevich and R. Martin, Adding random edges to dense graphs, *Random Structures Algorithms* **24**(2) (2004), 105–117. [Journal Copy]
- [7] A. Frieze, M. Krivelevich and R. Martin, The emergence of a giant component in random subgraphs of pseudo-random graphs, *Random Structures Algorithms* **24**(1) (2004), 42–50. [Journal Copy]
- [6] T. Bohman, C. Cooper, A. Frieze, R. Martin and M. Ruzinkó, On randomly generated intersecting hypergraphs, *Electron. J. Combin.* **10** (2003), Research Paper 29, 10pp. (electronic). [Journal Copy]
- [5] T. Bohman and R. Martin, A note on G -intersecting families, *Discrete Math.* **260** (2003), no. 1-3, 183–188. [Journal Copy]
- [4] T. Bohman, A. Frieze and R. Martin, How many random edges make a dense graph hamiltonian?, *Random Structures Algorithms* **22**(1) (2003), 33–42. [Journal Copy]
- [3] Cs. Magyar and R. Martin, Tripartite version of the Corrádi-Hajnal theorem, *Discrete Math.* **254** (2002), no. 1-3, 289–308. [Journal Copy]
- [2] F. Lazebnik, W. Li and R. Martin, Random walks on rooted trees, *Bull. Inst. Combin. Appl.* **22** (1998), 59–66. [PrePrint]

Refereed conference proceedings:

- [1] J. Benashski, R. Martin, J. Moore and L. Traldi, On the β -invariant for graphs, Proceedings of the Twenty-sixth Southeastern International Conference on Combinatorics, Graph Theory and Computing (Boca Raton, FL, 1995). *Congr. Numer.* **109** (1995), 211–221. [PrePrint]

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Publications (cont.)

Unpublished Manuscripts:

- M. Axenovich and R. Martin A version of Szemerédi's regularity lemma for multicolored graphs and directed graphs that is suitable for induced graphs. [arXiv]

Extended Abstracts:

- R. Martin (based on joint work with J. Balogh and A. Pluhár), The diameter game (extended abstract), in *Oberwolfach Reports* 4(2) (2007) 1073–1114. [PrePrint]
- A. Frieze, R. Martin, J. Moncel, M. Ruszinkó and C. Smyth, Identifying codes in random networks (extended abstract), *Proceedings of the 2005 IEEE International Symposium on Information Theory (Adelaide, Australia, 2005)* (2005), 1461–1467. [PrePrint]
- R. Martin (based on joint work with Cs. Magyar), Tripartite version of the Corrádi-Hajnal Theorem (extended abstract), *Paul Erdős and his mathematics (Budapest, 1999)*, 166–168, *János Bolyai Math. Soc., Budapest*, 1999.

Dissertations:

- On graph packing, induced subgraphs and intersecting hypergraphs, Ph. D. dissertation, Rutgers University, October 2000, 159pp. [Thesis]
- Minimum expected time of random walks on rooted trees, Senior thesis, University of Delaware, May 1995, 63pp.

Publications are available by links on this document or at my website.

<http://www.math.iastate.edu/rymartin/pubs.pdf>

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Conferences and Talks

Invited Talks

- “On diamond-free subsets of the Boolean lattice,” Algebra and Logic Seminar, Department of Mathematics, University of South Carolina, Columbia, SC, March 16, 2012.
- “The small world problem: Six degrees of graph theory,” MATH/CS Colloquium Presentation, Department of Mathematics and Computer Science, The Citadel, Charleston, SC, March 13, 2012.

- “On the edit distance from $K_{2,t}$ -free graphs,” Special Section on Extremal and Probabilistic Combinatorics, AMS Central Section Meeting (#1074), Lincoln, NE, October 15, 2011.
- “Induced saturation number,” Special Section on Extremal Combinatorics, AMS Southeastern Section Meeting (#1073), Winston-Salem, NC, September 25, 2011.
- “Recent results on the edit distance of graphs,” Seminar, Department of Mathematics, University of British Columbia, Vancouver, BC, Canada, July 26, 2011.
- “Induced saturation number,” Special Section on Extremal Combinatorics, AMS Western Section Meeting (#1071), Las Vegas, NV, May 1, 2011.
- “Recent results on the edit distance of graphs,” Discrete Mathematics Seminar, Department of Mathematics, University of South Carolina, Columbia, SC, March 16, 2011.

- “Expected value of the minimum rank of a graph,” Seminar class talk, Department of Mathematics, University of Illinois at Urbana-Champaign, Urbana, IL, November 10, 2010.
- “ Q_2 -free families in the Boolean lattice,” Graph Theory and Combinatorics Seminar, Department of Mathematics, University of Illinois at Urbana-Champaign, Urbana, IL, November 9, 2010.
- “Recent results on the edit distance of graphs,” Special Section on Graph Theory, AMS Southeastern Section Meeting (#1065), Richmond, VA, November 6, 2010.
- “Vertex identifying codes in infinite grids,” Discrete Mathematics Seminar, Department of Mathematics, Virginia Commonwealth University, Richmond, VA, November 4, 2010.
- “The small world problem: Six degrees of graph theory,” Joint Mathematics Colloquium, Millersville University/Franklin & Marshall College, Lancaster, PA, November 2, 2010.

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Conferences and Talks (cont.)

Invited Talks (cont.)

- “Recent results on the edit distance of graphs,” Combinatorics Seminar, Department of Pure Mathematics and Mathematical Statistics, University of Cambridge, Cambridge, UK, October 14, 2010.
- “Recent results on the edit distance of graphs,” Seminar on Discrete Mathematics and Game Theory, Department of Mathematics, London School of Economics and Political Science, London, UK, October 7, 2010.
- “Vertex identifying codes in infinite grids,” Discrete Geometry and Combinatorics Seminar, Department of Mathematics, University College London, London, UK, October 6, 2010.
- “Recent results on the edit distance of graphs,” Combinatorics Seminar, School of Mathematics, University of Birmingham, Birmingham, UK, October 4, 2010.
- “ Q_2 -free families in the Boolean lattice,” Combinatorics Seminar, School of Mathematical Sciences, Queen Mary College, University of London, London, UK, October 1, 2010.

- “Recent results on the edit distance of graphs,” Discrete mathematics Seminar, Department of Mathematics, University of Nebraska – Lincoln, Lincoln, NE, August 31, 2010.
- “Computing the edit distance function,” Extremal Graph Theory Minisymposium, 2010 SIAM Conference on Discrete Mathematics, Austin, TX, June 17, 2010.
- “The small world problem: Six degrees of graph theory,” Research Seminar, Mathematics, Statistics, and Computer Science Department, St. Olaf College, Northfield, MN, May 4, 2010.
- “Tiling in Multipartite Graphs,” SIAM Minisymposium on Graph Theory, 2010 Joint Meetings (#1056), San Francisco, CA, January 15, 2010.

- “Tiling in Multipartite Graphs,” Discrete Math Seminar, Texas State University, San Marcos, TX, November 13, 2009.
- “The small world problem: Six degrees of graph theory,” Convocation Series, Illinois College, Jacksonville, IL, September 7, 2009.
- “Expected value of the minimum rank of a graph,” Graph Theory and Combinatorics Seminar, Department of Mathematics, University of Illinois at Urbana-Champaign, Urbana, IL, May 19, 2009.
- “On Avoider-Enforcer games,” 33rd SIAM Southeastern-Atlantic Section Conference, Columbia, SC, April 4, 2009.
- “On Avoider-Enforcer games,” Special Session on Probabilistic and Extremal Combinatorics, AMS Central Section Meeting (#1047), Urbana, IL, March 28, 2009.

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Conferences and Talks (cont.)

Invited Talks (cont.)

- “The small world problem: Six degrees of graph theory,” Department of Mathematics and Computer Science Seminar, Central College, Pella, IA, November 18, 2008.
- “The small world problem: Six degrees of graph theory,” Department of Mathematics and Computer Science Seminar, Macalester College, St. Paul, MN, November 11, 2008.
- “On the edit distance function,” International Conference on Interdisciplinary Mathematical and Statistical Techniques, University of Memphis, Memphis, TN, May 18, 2008.
- “Tiling in multipartite graphs,” ACO (Algorithms, Combinatorics and Optimization) Seminar, Carnegie Mellon University, Pittsburgh, PA, May 1, 2008.
- “Tiling in multipartite graphs,” Graph Theory and Combinatorics Seminar, Department of Mathematics, University of Illinois at Urbana-Champaign, Urbana, IL, April 29, 2008.
- “The edit distance function,” Special Session on Graph Theory, AMS Central Section Meeting (#1038), Bloomington, IN, April 6, 2008.

- “Computing edit distance,” Applied mathematics seminar, Department of Applied Mathematics, Illinois Institute of Technology, Chicago, IL, November 20, 2007.
- “The edit distance in graphs,” Applied mathematics colloquium, Department of Applied Mathematics, Illinois Institute of Technology, Chicago, IL, November 19, 2007.
- “The edit distance in graphs,” Special Session on Extremal and Probabilistic Combinatorics, AMS Central Section Meeting (#1030), Chicago, IL, October 5-6, 2007.
- “On the edit distance in graphs,” Discrete Mathematics and Algebra Seminar, University of Delaware, Department of mathematical sciences, Newark, DE, May 11, 2007.
- “The diameter game,” Miniworkshop: Positional Games, 0715c, Mathematisches Forschungsinstitut Oberwolfach, Germany, April 8-14, 2007.
- “The diameter game,” Special Session on Graph Theory, AMS Central Section Meeting (#1025), Oxford, OH, March 16-17, 2007.

- “Vertex identifying codes and the random graph,” Computer Science department colloquium, Iowa City, IA, November 4, 2005.
- “Vertex identifying codes and the random graph,” Discrete mathematics and algebra seminar, University of Delaware, Department of mathematical sciences, Newark, DE, May 15, 2005.
- “Online intersecting hypergraphs,” Mathematics seminar, Department of Mathematics, Statistics and Computer Science, University of Illinois at Chicago, Chicago, IL, March 16, 2005.
- “Six degrees of graph theory: Kevin Bacon, Paul Erdős, William McKinley and me,” Central College mathematics seminar, February 1, 2005.

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Conferences and Talks (cont.)

- Invited Talks (cont.)**
- “It’s raining hyperedges: Online intersecting hypergraphs beyond the threshold,” AMS Central Section Meeting (#1001), Evanston, IL, October 23-24, 2004.
 - “On the editing distance in graphs,” Mathematics seminar, Department of Mathematics, Statistics and Computer Science, University of Illinois at Chicago, Chicago, IL, March 17, 2004.
 - “The regularity lemma, the blow-up lemma and a conjecture of Corrádi and Hajnal,” Discrete mathematics and algebra seminar, University of Delaware, Department of mathematical sciences, Newark, DE, May 1999.
- Contributed Talks**
- “Expected value of the minimum rank of a graph,” 22nd Cumberland Conference on Combinatorics, Graph Theory and Computing, Bowling Green, KY, May 21, 2009.
 - “On the edit distance function for graphs,” Fete of Combinatorics and Computer Science, Organized by the Rényi Institute, Keszthely, Hungary, August 12, 2008.
 - “The edit distance in graphs,” (Your Regular) Workshop on Extremal Graphs and Hypergraphs, Pittsburgh, PA, May 5, 2007.
 - “Recent results on packing problems in multipartite graphs,” Horizons of Combinatorics, Balatonalmádi, Hungary, July 19, 2006.
 - “Vertex identifying codes and the random graph,” MIGHTY XLII, Marion, OH, April 29, 2006.
 - “Vertex identifying codes and the random graph,” MAA-Iowa conference, Ames, IA, April 7, 2006.
 - “The editing distance in graphs,” Rocky mountain discrete mathematics days, Laramie, WY, August 2, 2005.
 - “Vertex identifying codes and the random graph,” WaterMellon conference, Pittsburgh, PA, May 21, 2005.
 - “Vertex identifying codes and the random graph,” Brualdi-fest, Madison, WI, April 30, 2005.
 - “Six degrees of graph theory: Kevin Bacon, Paul Erdős, William McKinley and me,” MAA-Iowa conference, April 17, 2004.
 - “On the editing distance in graphs,” Conference on extremal combinatorics honoring 200 years of Peter Frankl, Zoltán Füredi, Ervin Győri and János Pach, Rényi Institute, Budapest, Hungary, April 5, 2004.
 - “You’ve got Erdős-Ko-Radó: Intersecting hypergraphs online,” MIGHTY XXXVII, Valparaiso, IN, September 20, 2003.
 - “Antiramsey Numbers,” AMS Central Section Meeting (#985), Bloomington, IN, April 5, 2003.
 - “How many random edges make a dense graph Hamiltonian?,” SIAM Conference on Discrete Mathematics, San Diego, CA, August 14, 2002.

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Conferences and Talks (cont.)

- Contributed Talks (cont.)** “On the β -invariant for graphs,” Southeastern International Conference on Combinatorics, Graph Theory and Computing, Boca Raton, FL, March 1995.
- Other Conferences Attended**
- AMS Central Section Meeting (#1069), Iowa City, IA, March 18-20, 2011.
- Szemerédi70: A conference in honor of the 70th birthday of Endre Szemerédi, Organized by the Rényi Institute and held at the Gólyavár at Eötvös Lóránd University, Budapest, Hungary, August 2-6, 2010.
- Theory and Applications of Matrices Described by Patterns, Banff International Research Station (BIRS) workshop, Banff, Alberta, Canada, January 31-February 5, 2010.
- Building Bridges: A conference on Mathematics and computer science in honor of Laci Lovász, Partially organized by the Rényi Institute and held at the Gólyavár at Eötvös Lóránd University, Budapest, Hungary, August 5-9, 2008.
- New Directions in Algorithms, Combinatorics and Optimization, Georgia Institute of Technology, Atlanta, GA, May 5-9, 2008.
- Random Combinatorial Structures, University of Nebraska-Lincoln, Lincoln, NE, April 20-22, 2007.
- EXCILL: Extremal Combinatorics at Illinois, University of Illinois at Urbana-Champaign, Urbana, IL, November 18-20, 2006.
- Horizons of Combinatorics (Summer School), Rényi Institute, Budapest, Hungary, July 10-14, 2006.
- FriezeFest, Carnegie Mellon University, Pittsburgh, PA, October 21-22, 2005.
- Paul Erdős and his Mathematics, Rényi Institute, Hungarian Academy of Sciences, Budapest, Hungary, July 1999.
- Teaching-learning conference, Rutgers University, New Brunswick, NJ, January 1998.
- Seminar Talks**
- “More on vertex identifying codes and related parameters,” **ISU** discrete math seminar, February 7, 2012.
- “Vertex identifying codes and random graphs,” Electrical and Computer Engineering Department Faculty Seminar, February 6, 2012.
- “Fractional version of the multipartite Hajnal-Szemerédi theorem,” **ISU** discrete math seminar, November 8, 2011.
- “Random partitions of regular pairs,” **ISU** probability seminar, November 7, 2011.
- “Using localization to compute edit distance II,” **ISU** discrete math seminar, January 25, 2011.
- “Using localization to compute edit distance I,” **ISU** discrete math seminar, January 18, 2011.
- “On the structure of almost all graphs in a hereditary property,” **ISU** probability seminar, December 6, 2010.
- “Entropy and counting,” **ISU** discrete math seminar, April 13, 2010.
- “The entropy method and the number of independent sets in a regular graph,” **ISU** discrete math seminar, March 23, 2010.
- “The Hoffman-Singleton theorem,” **ISU** discrete math seminar, January 19, 2010.

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Conferences and Talks (cont.)

- Seminar Talks (cont.)**
- “Tiling on multipartite graphs,” **ISU** discrete math seminar, September 1, 2009.
 - “On the minimum rank of graphs,” **ISU** discrete math seminar, April 14, 2009.
 - “On Avoider-Enforcer games,” **ISU** discrete math seminar, March 31, 2009.

 - “The edit distance in graphs,” **ISU** Mathematics Department Colloquium, October 27, 2008.
 - “Counting the number of regions formed by circles in the plane,” Pi Mu Epsilon Seminar, **ISU**, October 19, 2008.
 - “The vertex Ramsey problem,” **ISU** discrete math seminar, February 19, 2008.

 - “The edit distance in graphs,” **ISU** graduate student seminar, October 19, 2007.
 - “Edit distance in graphs: Colored regularity graphs,” **ISU** discrete math seminar, October 2, 2007.
 - “Some intriguing open problems regarding positional games,” **ISU** discrete math seminar, April 17, 2007.
 - “Beauty is rare: The Hoffman-Singleton theorem,” **ISU** discrete math seminar, February 6, 2007.

 - “The diameter game,” **ISU** discrete math seminar, November 14, 2006.
 - “Generalized tic-tac-toe: Introduction to Positional Games and probabilistic intuition,” **ISU** discrete math seminar, November 7, 2006.
 - “Introduction to expander graphs,” **ISU** discrete math seminar, April 17, 2006.
 - “Smoothed analysis of graphs,” **ISU** discrete math seminar, March 20, 2006.
 - “On the editing distance in graphs,” **ISU** discrete math seminar, March 10, 2006.

 - “An application of Szemerédi’s regularity lemma,” **ISU** discrete math seminar, November 1 & 8, 2005.
 - “The small world problem and so much more! 6^{6^6} degrees of graph theory,” **ISU** graduate student seminar, October 19, 2005.
 - “The small world problem: Kevin Bacon, Paul Erdős, William McKinley, and me – 5 degrees of graph theory,” **ISU** summer seminar series (Related to the REU), July 14, 2005.
 - “Identification codes and superimposed codes,” **ISU** discrete math seminar, Feb. 10 & 17, 2005.

 - “Report on the extremal combinatorics session of the Central Section Meeting of the AMS,” **ISU** discrete math/theory of computing seminar, October 29, 2004 (with M. Axenovich, A. Wangsness).
 - “Vertex identification codes in graphs,” **ISU** discrete math/theory of computing seminar, October 15, 2004.
 - “Six degrees of graph theory: Kevin Bacon, Paul Erdős, William McKinley and me,” **ISU** graduate student seminar, October 6, 2004.
 - “Online intersecting hypergraphs II,” **ISU** discrete math/theory of computing seminar, August 27, 2004.
 - “On the editing distance in graphs, part II,” **ISU** discrete math/theory of computing seminar, February 6, 2004.

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Conferences and Talks (cont.)

Seminar Talks (cont.) “You’ve got Erdős-Ko-Radó: Intersecting hypergraphs online,” **ISU** combinatorics/algebra seminar, November 10, 2003.

“Report from the 37th Midwestern Graph Theory Conference,” **ISU** combinatorics/algebra seminar, September 29, 2003 (with M. Axenovich).

“Six degrees of graph theory: Kevin Bacon, Paul Erdős, William McKinley and me,” **CMU** mathematics undergraduate seminar, February, 2003.

“The regularity lemma,” **CMU** mathematics colloquium, March 2002.

“The Shannon capacity and Ramsey theory,” **RU** graduate student seminar, December 1998.

Job

Interview

Talks

“The regularity lemma and applications”

- University of Alabama in Huntsville, Huntsville, AL, March 2003.
- Iowa State University, March 2003.
- University of Delaware, Newark, DE, February 2003.
- Louisville University, Louisville, KY, February 2003.

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