

# Curriculum Vitae of Huajun Huang

## Personal Information

Address: Mathematics and Statistics  
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Education: Ph.D., [Yale University](#), advisor [Roger Howe](#), May 2004.  
B.A., [University of Science and Technology of China](#), July 1998.

Member: [Sigma Xi, The Scientific Research Society](#) (2009-present).  
[American Mathematical Society](#) (1998-present).  
[Mathematical Association of America](#) (2005-2006).

## Research Articles

My research interests include the structures of Lie groups and algebraic groups, matrix theory, and algebraic combinatorics. Below is a list of my recent research works:

### Submitted:

1. Hongyu He and Huajun Huang, *Symmetric subgroup actions on isotropic Grassmannians*, submitted.
2. Huajun Huang and Tin-Yau Tam, *Aluthge iteration in semisimple Lie group*, submitted.

### Accepted or Published:

1. Huajun Huang and Sangjib Kim, *On Kostant's partial order on hyperbolic elements*, *Linear and Multilinear Algebra*, to appear.
2. Huajun Huang and Tin-Yau Tam, *On Gelfand-Naimark decomposition of a nonsingular matrix*, *Linear and Multilinear Algebra*, to appear.
3. Huajun Huang, *Asymptotic behavior of Gelfand-Naimark decomposition*, *Operators and Matrices*, **3** (2009) 439-449.
4. Huajun Huang, *Some extensions of Witt's theorem*, *Linear and Multilinear Algebra*, **57** (2009) 321-344.
5. Huajun Huang and Tin-Yau Tam, *Some asymptotic behaviors associated with matrix decomposition*, *International J. of Information & Systems Sciences on Matrix Analysis and Applications*, **4** (2008) 148-159.
6. Huajun Huang and Tin-Yau Tam, *An asymptotic result on the a-component in Iwasawa decomposition*, *Journal of Lie Theory*, **17** (2007) 469-479.

7. Huajun Huang and Tin-Yau Tam, *On the convergence of Aluthge sequence*, Operators and Matrices, **1** (2007) 121–141.
8. Huajun Huang and Tin-Yau Tam, *An asymptotic behavior of QR decomposition*, Linear Algebra and its Applications, **424** (2007) 96–107.
9. Tin-Yau Tam and Huajun Huang, *An extension of Yamamoto's Theorem on the eigenvalues and singular values of a matrix*, Journal of the Mathematical Society of Japan, **58** (2006) 1197–1202.
10. Huajun Huang and Tin-Yau Tam, *On the QR iterations of real matrices*, Linear Algebra and its Applications, **408** (2005) 161–176.

#### Ph.D. Dissertation:

- Huajun Huang, *Borel subgroup orbits of classical symmetric subgroups on multiplicity-free flag manifolds* (advisor: Roger Howe).

#### In Preparation:

1. Randall Holmes, Huajun Huang and Tin-Yau Tam, *Asymptotic behavior of Iwasawa and Cholesky iterations*.
2. Huajun Huang, *On complete multiplicative Jordan decomposition*,
3. Huajun Huang, *Borel orbits and invariants of two classical symmetric pairs on flag manifolds*
4. Huajun Huang, *Borel orbits and invariants of classical symmetric subgroups on multiplicity-free Grassmannians (II)*.
5. Huajun Huang, *Borel orbits and invariants of classical symmetric subgroups on multiplicity-free Grassmannians (I)*.

#### Teaching History

- Auburn:
 

2009	Fall	Math2660-126	Linear Algebra
		Math1620-111	Calculus II
	Summer	Math1690-291	Business Calculus II
	Spring	Math6310-100	Abstract Algebra I
		Math5310-100	Abstract Algebra I
		Math2650-110	Linear Differential Equations
2008	Fall	Math2650-081	Linear Differential Equations
		Math1620-101	Calculus II
	Summer	Math1690-181	Business Calculus II
	Spring	Math7320-101	Graduate Algebra II
		Math2660-122	Linear Algebra

2007	Fall	Math5320-001	Abstract Algebra II
		Math2630-111	Calculus III
	Summer	Math1620-091	Calculus II
	Spring	Math5320-001	Abstract Algebra II
		Math1620-092	Calculus II
2006	Fall	Math5310-001	Abstract Algebra I
		Math1610-142	Calculus I
	Summer	Math2660-231	Linear Algebra
	Spring	Math2660-116	Linear Algebra
		Math1620-121	Calculus II
2005	Fall	Math2660-111	Linear Algebra
		Math1610-126	Calculus I
	Spring	Math2660-111	Linear Algebra
Math2660-081		Linear Algebra	
2004	Fall	Math2660-116	Linear Algebra
		Math2660-096	Linear Algebra
• Yale:			
2003	Fall	Math120	Multivariable Calculus
	Spring	Math120	(Tutor Sessions)
Math115		(Tutor Sessions)	
Math112		(Tutor Sessions)	

## Talks and Visitings

- November 11, 2009, Auburn University,  
[Invariants in some group actions.](#)
- October 8-11, 2009, North Carolina State University,  
[Southeastern Lie Theory Workshop on Combinatorial Lie Theory and Applications.](#)
- May 18, 2009, Zhejiang Normal University,  
[Witt's theorem: history, extensions, and applications.](#)
- May 15, 2009, Shanghai Jiao Tong University,  
[Isometry group actions on subspaces.](#)
- May 4, 2009, Louisiana State University,  
[On simultaneous isometry of subspaces.](#)
- April 17, 2009, Auburn University at Montgomery,  
[Some extensions of Witt's theorem.](#)
- June 26, 2008, Auburn University, ([GK-12 Math Fellow Meeting](#))  
[The Pythagorean Theorem: proof and generalizations.](#)
- March 24, 2007, Auburn University, ([Robert C. Thompson Matrix Meeting](#))  
[On Gelfand-Naimark decomposition of a nonsingular matrix.](#)

- December 15-17, 2006, Nova Southeastern University  
([2nd International Workshop on Matrix Analysis and Applications](#))  
On the convergence of Aluthge sequence.
- October 29, 2006, Auburn University, ([Southeastern Algebra Conference](#))  
On the convergence of Aluthge sequence.
- June 8-17, 2006, Nankai University, Tianjin, China  
[Summer School: Representation Theory and Harmonic Analysis](#).
- June 4-6, 2006, China University of Mining Technology, Xuzhou, China  
[Borel orbits and invariants of symmetric subgroups on flag manifolds](#).
- October 27, 2005, University of South Alabama  
[Borel orbits of symmetric subgroups on flag manifolds](#).
- April 14, 2005, Auburn University  
[Linear algebra, Lie groups, Lie algebras, and representation theory](#).
- March 24-27, 2005, University of Arizona. [Geometric Representation Theory Workshop](#).
- January 5-8, 2005, Atlanta, GA. [AMS-MAA joint meeting](#).
- November 13, 2004, San Jose State University, ([Southern California Matrix Meeting](#))  
[Borel orbits and invariants of classical symmetric subgroups on multiplicity-free complete flag manifolds](#).
- September 24, 2004, Auburn University  
[Representations and invariants behind some decompositions \(II\)](#).
- September 17, 2004, Auburn University  
[Representations and invariants behind some decompositions \(I\)](#).
- Spring 2004, Yale University. [Some seminar talks](#).
- March 8, 2004, Auburn University  
[Borel orbits and invariants of classical symmetric subgroups on multiplicity-free flag manifolds](#).
- February 2004, Yale University  
[Borel orbits and invariants of classical symmetric subgroups on Grassmannians](#).
- May 2001, Yale University  
[Combined hyperbolic plane decompositions of isometry groups](#).

## Other Academic and Outreach Services

- Reviewer for *MathSciNet* (*Mathematical Reviews on the Web*).
- Referee for Peer-Reviewed Journals:
  - *Linear and Multilinear Algebra*

- *Linear Algebra and Its Applications*
- *American Mathematical Monthly*
- *Journal of Mathematical Sciences: Advances and Applications*
- Advisor of the Graduate Student:
  - Daniel Brice, Mathematics, 2009 spring - present.
- Member of the Ph.D. Committees:
  - Roy Xuhua Liu (advisor Tin-Yau Tam): Mathematics, 2008-present.
  - Jason Ervin (advisor Randall Homles): Mathematics, 2006-2007.
- Outside Reader of the Ph.D. Dissertation:
  - Heping Liu (advisor Saeed Maghsoodloo): Industrial and Systems Engineering, 2009.
- Member of Master of Science in Mathematics and Master of Applied Mathematics Committees:
  - Mary Clair Thompson (advisor Tin-Yau Tam): M.S.M., 2007-present.
  - Ruchika Sabharwal (advisor Narendra Govil): M.A.M., 2007-present.
  - Neha Agarwal (advisor Narendra Govil): M.A.M., 2006-2007.
- Chair of the graduate algebra preliminary examination committee, 2008.
- Assistant chair of the organizing committee of the joint meeting of 85th MAA (Mathematical Association of America) Meeting (Southeastern Section) and 30th SIAM (Society for Industrial and Applied Mathematics) Annual Meeting (Southeastern Atlantic Section), April 2005 - April 2006.
- Participate in GK-12 Fellow Presentation, June 2008.
- Help organize Science Olympiad events, 2005-2009.