

Hee Oh

Box 1917
151 Thayer Street
Providence, RI 02912
(401)863-1134
e-mail: heeoh@math.brown.edu

Education:

B.Sc. Feb 1992, Seoul National University, Seoul, Korea

Ph.D May 1997, Yale University
thesis title Discrete subgroups generated by lattices in opposite horospherical subgroups
thesis adviser Gregory A. Margulis

Academic Appointments:

April 2008-:	KIAS Scholar	Korea Institute for Advanced Study
July 2006-:	Professor	Brown university
April 2006- Aug 2007 :	Professor	Caltech
June 2003-March 2006 :	Associate Professor with tenure	Caltech
Sep 2002-May 2003:	Member	Institute for Advanced Study
Sep 1999-June 2003:	Assistant Professor	Princeton University
June 2000 :	Member	Issac Newton Institute
Oct 1998-June 1999 :	Golda Meir Postdoctoral Fellow	The Hebrew University in Jerusalem, Israel
Aug-Sep 1998:	Visiting Assistant Professor	University of Chicago
July 1998:	Visiting Scholar	University of Bielefeld, Germany
Aug 1997-May 1998:	Visiting Assistant Professor	Oklahoma State University
June-July 1997:	Visiting Scholar	University of Bielefeld, Germany

Awards or Distinction:

Lady Davis Postdoctoral fellowship 1998-1999
NSF research grants 1997-1998, 2000-2003, DMS 0333397: 2003-2006, DMS 0629322: 2006-2011
AMS Central sectional meeting 2005, plenary speaker

Synergistic activities:

Organizer of Group Actions seminar at Brown (since 2007)
Co-Organizer of Lie group seminar at Caltech (2004-2006)
Co-Organizer of Special session Discrete groups, homogeneous space, rigidity at AMS sectional meeting (TX, April 2005)
Co-Organizer of Conference "Lie groups: Dynamics, Rigidity, Arithmetic"
in honor of Margulis' 60th birthday (Yale, Feb 24-27, 2006)
Co-Editor of the special issue of Quarterly Journal of Pure and Applied Math.
in honor of G. Margulis

Publications and preprints:

- Discrete subgroups of $SL_n(\mathbb{R})$ generated by lattices in horospherical subgroups*
C. R. Acad. Sci. Paris, Series I, vol 323 (1996), 1219-1224
- Discrete subgroups generated by lattices in opposite horospherical subgroups*
J. of Algebra, Vol 203 (1998) 621-676.
- Arithmetic properties of some Zariski dense subgroups*
"Lie groups and Ergodic theory" in TIFR, Bombay, 1996.
- Tempered subgroups and representations with minimal decay of matrix coefficients*
Bull. Math. Soc. France, vol 126 (1998), pp. 355-380
- On discrete subgroups containing a lattice in a horospherical subgroup*
Israel J. of Math., vol 110 (1999), pp. 333-340
- S-arithmetic properties of discrete subgroups containing lattices in horospherical subgroups*
Duke Math. J. Vol 101 (2000) pp.209-219.
- New examples of compact Clifford-Klein forms of homogeneous spaces of $SO(2,n)$ (with D. Witte).*
IMRN, 2000, no 5, pp. 235-251
- Cartan decomposition subgroups of $SO(2,n)$ (with D. Witte).*
Trans. AMS Vol 356 (2004), pp.1-38
- Compact Clifford-Klein forms of homogeneous spaces of $SO(2,n)$ (with D. Witte).*
Geom. Dedicata, vol 89 (2002), pp.25-57
- Uniform pointwise bounds for matrix coefficients of unitary representations and applications to Kazhdan constants*
Duke Math. J., Vol 113 (2002) pp. 133-192.
- Adelic version of Margulis arithmeticity theorem*
Math. Ann. vol 321 (2001), pp. 789-815
- Hecke operators and equidistribution of Hecke points (with L. Clozel and E. Ullmo)*
Invent. Math., Vol 144 (2001) pp. 327-351.
- The Ruziewicz problem and distributing points on homogeneous spaces of a compact Lie group*
Israel J. Math., Vol 149 (2005), pp. 301-316 (in the special volume in honor of H. Furstenberg)
- Equidistribution of integer points on a family of homogeneous varieties: a problem of Linnik*
(with W. T. Gan) Compositio Math. Vol 136, (2003), pp. 323-352.
- Harmonic analysis and Hecke operators*
Rigidity in Dynamics and Geometry, Springer-Verlag, edited by Burger and Iozzi
- Uniform exponential growth for linear groups (with A. Eskin and S. Mozes)*
Int. Math. Res. Notices, Vol 31 (2002) 1675-1683.
- On uniform exponential growth for linear groups (with A. Eskin and S. Mozes)*
Inventiones Math. Vol 160 (1), 2005, 1-30

- On a problem concerning arithmeticity of discrete groups acting on $H \times \dots \times H$*
in Algebraic groups and Arithmetic, 427–440, TIFR, Mumbai, 2004
- Ergodic theoretic proof of equidistribution of Hecke points*
(with A. Eskin) Erg. Theory and Dyn. Sys., Vol 26 (2006) 163–167
- Representations of integers by an invariant polynomial and unipotent flows* (with A. Eskin)
Duke M. J Vol 135 (2006) 481–506
- Hardy Littlewood system and representations of integers by an invariant polynomial*
Geom. Funct. Anal, Vol 14, (2004) 791–809.
- Finiteness of compact maximal flats of bounded volume*
Erg. Theory and Dyn. System, Vol 24 (2004) 217–225
- Lattice action on finite volume homogeneous spaces*
J. Korean Math., Vol 42 (2005) 635–653
- Orbits of discrete subgroups of a symmetric spaces and the Furstenberg boundary* (with A. Gorodnik)
Duke Math. J. Vol 139, (2007) 483–506
- Equidistribution of rational matrices in their conjugacy classes* (with Y. Benoist)
GAFA , Vol 17, (2007)
- Strong Wavefront lemma and counting lattice points in sectors* (with A. Gorodnik and N. Shah)
Submitted
- Integral points of symmetric varieties and the Satake boundary* (with A. Gorodnik and N. Shah)
To appear in American J. Math
- Manin’s and Peyre’s conjectures on rational points and Adelic mixing* (with A. Gorodnik and F. Maucourant)
To appear in Ann. Sci. Ecole. Norm. Sup
- Polar decomposition for p -adic symmetric spaces* (with Y. Benoist)
To appear in IMRN
- Effective equidistribution of S -integral points on symmetric varieties* (with Y. Benoist)
Submitted
- Rational points on homogeneous varieties and equidistribution of Adelic periods* (with A. Gorodnik)
Preprint
- Representations of integers by an invariant polynomial and unipotent flows II*
Preprint

Invited Lectures and Seminars:

1. Dynamics of Group actions seminar, Yale University, Oct 1, 9, 1995 (2 lectures).
2. Algebra seminar, Yale University, Oct 18, 1995.
3. Conference on Dynamical systems, Penn State University, Oct 21, 1995.
4. International Colloquium on Lie groups and Ergodic theory, TIFR, Bombay, India, Jan 7, 1996.
5. Special session on Discrete groups and Hyperbolic geometry, AMS meeting, New York, April 13, 1996.
6. Harmonic analysis and Number theory seminar, Ohio State University, Feb 20, 1997.

7. Lie group seminar, University of Michigan, Feb 24, 1997.
8. Conference in Ergodic theory, Geometry and Arithmetic, ESI, Vienna, Feb 5, 1997.
9. Lie group seminar, Bielefeld University, Germany, July 9, 1997.
10. Recent advances in Algebra, KAIST, Korea, Aug 12, 1997.
11. Lie group seminar, Oklahoma State University, U. S. A, Sep 10, 1997.
12. Colloquium, Oklahoma State University, U. S. A, Nov 7, 1997.
13. Special session on Lie Groups, Algebraic Groups: Their Arithmetic and Representation Theory, AMS meeting, Manhattan, KS, March 27, 1998.
14. Conference on Rigidity, representation and ergodic theory, Paris, France, June 19, 1998.
15. Special session on Rigidity in Geometry and Dynamics, AMS meeting, Chicago, IL, Sep 14, 1998.
16. Geometry and Topology seminar, University of Illinois at Chicago, IL, Sep 23, 1998.
17. Lie group seminar, Hebrew University, Israel, Nov, 1999.
18. Geometric analysis seminar, Technion, Haifa, Israel, Jan 21, 1999.
19. Geometry and topology seminar, University of Chicago, Chicago, Mar, 1999.
20. Amitsur Algebra seminar, Hebrew University, Israel, April, 1999.
21. Geometry seminar, ETH, Zurich, Switzerland, May 19, 1999.
22. Conference on Crystallographic groups and their generalizations II Kortrijk, Belgium, May 28, 1999
23. Lie group seminar, Yale University, Oct 7, 1999
24. Algebra and Algebraic Geometry seminar, Princeton University, Nov 16, 1999
25. Analysis seminar, Princeton University, Nov 22, 1999
26. Lie group seminar, Rutgers University, Mar 24, 2000
27. Workshop on Rigidity in Dynamics and Geometry, Issac Newton Institute, Cambridge, UK, March 31, 2000
28. Harmonic analysis seminar, University of Neuchatel, Swiss, June 14, 2000
29. Workshop on Ergodic theory, Riemannian Geometry and Number theory Issac Newton Institute, Cambridge June 2
30. Conference on Harmonic analysis and Representation theory of topological groups, MFO, Oberwolfach, July 12, 2000
31. Dynamics of Group actions, Yale University, Feb 12, 2001
32. Geometry and Topology seminar, University of Chicago, Feb 22, 2001
33. IAS/Princeton joint Number theory seminar, Princeton University, Oct 4, 2001
34. Semi-annual Workshop in Dynamical Systems and Related Topics, Penn-State, Oct 12, 2001
35. Lie group seminar, University of Michigan, Nov 19, 2001
36. Algebraic groups and Arithmetic, Tata Institute of Fundamental Research, Mumbai, India, Dec 18, 2001
37. Representation seminar, University of Maryland, Apr 10, 2002
38. Dynamics seminar, University of Maryland, Apr 11, 2002
39. Conference on Advances in rigidity theory, ETH, Zurich, Swiss, June 20, 2002
40. Summer school on Automorphic forms and Applications, Parkcity, Utah, July 19, 2002
41. Topology seminar, Cornell University, Oct 31, 2002
42. Geometry seminar, Brown University, Nov 14, 2002
43. Colloquium, Brown University, Nov 15, 2002
44. Colloquium, Cal Tech , Dec 9, 2002
45. Special Geomtery seminar, Cal Tech , Dec 10, 2002
46. Dynamics of Group actions, Yale University, Feb 18, 2003
47. Colloquium, UCLA, Feb 27, 2003
48. Lie group seminar, CUNY, April 1, 2003
49. AMS sectional meeting on Rigidity in Dynamics, Geometry and Group theory, New York, April 12, 2003
50. Conference on Ergodic properties of geometric group actions, Max-Plank-Gesellschaft (Schloss Ringberg), July 2, 2003
51. Geometry and Topology seminar, Caltech, Oct 31, 2003
52. Workshop on special points in Shimura varieties, Lorentz center, Leiden, The Netherlands, Dec 17, 2003
53. Representation theory seminar, UCSD, Mar 9, 2004
54. Colloquium, Rice University, Apr 15, 2004
55. Colloquium, Seoul National University, Korea, Sep 2, 2004
56. Maryland-Pennstate Woskshop on Dynamical Systems and Related Topics March 19, 2005
57. AMS 2005 Spring Central Sectional Meeting, Plenary lecture, April 9, 2005 TX
58. Number theory seminar, UCLA May 2, 2005

59. Lie group seminar, Caltech, May 11, 2005
60. Conference on Rigidity, Dynamics, and Group actions, July 10, 2005 BIRS, Canada
61. Joint Lie group/Number theory seminar, Caltech, Oct 20, 2005
62. Colloquium, Brown university, Dec 2, 2005
63. Joint Princeton/IAS Number theory seminar, Feb 22, 2006
64. Colloquium, USC, Apr 12, 2006
65. The 3rd international workshop for Korean women in Mathematics, June 26, 2006
66. Special seminar at Seoul National University, June 29, 2006
67. Special seminar at KIAS, June 30, 2006
68. Brandeis-Harvard-MIT-Northeastern Joint Math Colloquium, Sep 21, 2006
69. Colloquium, Yale university, Oct 11, 2006
70. Special seminar at Ecol. Norm. Sup, Paris, France, June 2007
71. Advanced lecture series, Clay 2007 summer school on Homogeneous flows, Moduli spaces and Arithmetic, Pisa, Italy, June 11-July 6, 2007
72. Conference on Lie algebras and applications, KIAS Seoul, Korea, July 30, 2007
73. Algebra seminar, Brown university, Sep 17, 2007
74. Algebra seminar, Brown university, Feb 4, 2008