CURRICULUM VITAE

## 1. PERSONAL INFORMATION

Der-Chen Chang
Department of Mathematics and Statistics and Department of Computer Science

### Educational background

Ph. D., Princeton University, May 1987
    Advisor: Professor Elias M. Stein
M. A., Princeton University, May 1984
M. S., National Tsing Hua University (Taiwan), June 1981
B. A., National Tsing Hua University (Taiwan), June 1979

### Employment background

1. Professor, Department of Mathematics and Statistics, Georgetown University, 1998-Present

2. Professor, Department of Computer Science, Georgetown University, 2010-Present

3. Special Assistant to the Provost for China Initiatives, Georgetown University, June 1, 2011-Present

4. Lo-Jia Chair Professor, Institute of Mathematics, Wuhan University, October 1, 2010-Present

5. University Chair Professor, Fu Jen Catholic University, August 1, 2012-Present

6. Honoary Chair Professor, Tunghai University, January 2013-Present

7. Acting Chairman, Department of Mathematics & Statistics, Georgetown University, July 1, 2010- June 30, 2011

8. Associate Professor, University of Maryland at College Park, 1992-1999

9. Assistant Professor, University of Maryland at College Park, 1988-1992

10. Visiting Professor, National Center for Theoretical Sciences, (Hsinchu, Taiwan), June 2005; June-July 2006; January-March 2007; May-August 2007; December 2007-January 2008; May-July, 2008, May-August, 2009; December, 2009-January, 2010; May-July, 2010; June-July, 2011; July-August 2012; December 2012-July 2013

11. Center Scientist, The National Center for Theoretical Sciences, Hsinchu, Taiwan, December 2011-July 2014.

12. Visiting Professor, The Academia Sinica (Taipei, Taiwan), June-July 1998; June-July 1999; June 2000; June-July 2001; June-July 2002; December 2003-January 2004; June-July 2004; December 2004; June-July 2005, December 2006, June 2012

13. Visiting Professor, Universidad Técnica Feferico Santa Maria (Valparaiso, Chile), March 2005; December 2005

14. Visiting Professor, National Sun-Yat Sen University, (Kaohsiung, Tawian). December, 2008; June 2009

15. Visiting Professor, Beijing Normal University (Beijing, China), October 2004

16. Visiting Professor, The University of Hong Kong, (Hong Kong), June 1997-August 1997; March 2000; July 2000; November 2003; December 2004; July 2007; July 2008

17. Visiting Professor, Tohoku University (Sendai, Japan), December 1996-January 1997

18. Visiting Professor, Hong Kong University of Science & Technology, (Hong Kong), July 1995-June 1996; December 2000; September 2005; July 2006; December 2007; December 2010; July 2011

19. Visiting Research Fellow, Princeton University, September 1992-December 1993

20. Visiting Professor, Université Paris-Orsay (Paris, France), July 1993-September 1993

21. Postdoctor, Mathematical Sciences Research Institute (Berkeley, California), 1987-1988
Advisors: Professor Charles Fefferman and Professor Elias M. Stein

## 2. RESEARCH, SCHOLARLY, AND CREATIVE ACTIVITIES

### a. Articles in Refereed Journals

1. On $L^p$ and Hölder estimates for the $\bar{\partial}$-Neumann problem on strongly pseudoconvex domains, Math. Ann., **282**, 267-297, (1988).

2. A note on the kernel of the $\bar{\partial}$-Neumann operator on strongly pseudo-convex domains, MSRI Report 00521-88, Manuscripta Math., **62**, 437-447, (1988).

3. Estimates for the $\bar{\partial}$-Neumann problem for pseudo-convex domains in $\mathbf{C^2}$ of finite type (with A. Nagel and E.M. Stein), Proc. Natl. Acad. Sci. USA, **85**, 8771-8774, (1988).

4. Optimal $L^p$ and Hölder estimates for the Kohn solution of the $\bar{\partial}$-equation on strongly pseudo-convex domains, Trans. Amer. Math. Soc., **315**, 273-304, (1989).

5. An application of Ricci-Stein theorem to estimates of the Cauchy-Riemann equations, *"Analysis and Partial Differential Equations"*, Lecture Notes in Pure and Applied Math. **122** (ed. by C. Sadosky), Marcel Dekker, 51-84 (1990).

6. Estimates for singular integral operators with mixed type homogeneities in Hardy classes, Math. Ann., **287**, 303-322, (1990).

7. Holomorphic Lipschitz functions and application to the $\bar{\partial}$-problem (with S. Krantz), Colloquium Mathematicum, **LXII**, 227-256, (1991).

8. $H^p$ regularity for NIS operators on weakly pseudo-convex domains of finite type in $\mathbf{C^2}$ (with S. Krantz), Proc. Symp. Pure Math., **52**, Part III, 35-53, (1991).

9. Estimates for the Szegö and Henkin kernels in Hardy classes on certain unbounded weakly pseudo-convex domains (with T. Nguyen), J. Math. Anal. Appl., **162**, 339-370, (1991).

10. A Morera type theorem for $L^2$ functions in the Heisenberg group (with M. Agranovsky, C. Berenstein, and D. Pascuas), J. d'Analyse Mathematique, **162**, 282-296, (1991).

11. Nankai lecture in $\bar{\partial}$-Neumann problem, *"Harmonic Analysis"*, Springer Verlag Lecture Notes in Math. **1494** (ed. by S.S.Chern and etc.), 1-33, (1992).

12. Variation on the theorem of Morera (with C. Berenstein, D. Pascuas, and L. Zalcman), Contemporary Math., **137**, 63-78, (1992).

13. Hardy spaces and elliptic boundary value problems (with S. Krantz and E.M. Stein), Contemporary Math., **137**, 119-132, (1992).

14. Théorèmes de Morera et Pompeiu pour le groupe de Heisenberg (witM. Agranovsky, C. Berenstein, and D. Pascuas), C. R. Acad. Sci. Paris, **315**, 655-659, (1992).

15. Estimates for the $\bar{\partial}$-Neumann problem in pseudoconvex domains of finite type in $\mathbf{C^2}$ (with A. Nagel and E.M. Stein), Acta Math., **169**, 153-227, (1992).

16. Régularité de la projection de Szegö dans les domaines découplés de typfini de $\mathbf{C^n}$ (with S. Grellier), C. R. Acad. Sci. Paris, **315**, 1365-1370, (1992).

17. $H^p$ theory on a smooth domain in $\mathbf{R^N}$ and elliptic boundary value problems (with S. Krantz and E.M. Stein), J. Func. Anal., **114**, 286-347, (1993).

18. Morera theorem for holomorphic $H^p$ spaces in the Heisenberg group (with M. Agranovsky and C. Berenstein), J. Reine Angew. Math., **443**, 49-89, (1993).

19. A note on Wronskians and linear dependence of entire functions in $\mathbf{C^n}$ (with C. Berenstein and B.Q. Li), Complex Variables, **24**, 131-144, (1994).

20. The dual of Hardy spaces on a bounded domain in $\mathbf{R^n}$, Forum Math., **6**, 65-81, (1994).

21. Injectivity of the Pompeiu transform in the Heisenberg group (with M. Agranovsky, C. Berenstein and D. Pascuas), J. d'Analyse Mathematique, **63**, 131-173, (1994).

22. Ergodic and mixing properties of radial measures on the Heisenberg group (with M. Agranovsky and C. Berenstein), *"Fourier Analysis - Analytic and Geometric Aspects"*, Lecture Notes in Pure and Applied Math. **157** (ed. by Bray, Milojević, and Stanojević), Marcel Dekker, 1-15, (1994).

23. Estimates for the Szegö kernel in decoupled domains (with S. Grellier), J. Math. Anal. Appl., **187**, 628-649, (1994).

24. On composition of meromorphic functions in several complex variables (with B.Q. Li and C.C. Yang), Forum Math., **7**, 77-94, (1995).

25. Shared values for meromorphic functions (with C. Berenstien and B.Q. Li), Advances in Math., **115**, 201-220, (1995).

26. On $L^p$ estimates of the Cauchy-Riemann equation (with C. Fefferman), *"Harmonic Analysis in China"*, (ed. by C.C. Yang), 1-21, Kluwer Academic Publishers, (1995).

27. Interpolating varieties and counting functions in $\mathbf{C^n}$ (with C. Berenstein and B.Q. Li), Michigan J. Math., **42**, 419-434, (1995).

28. On zero sets of holomorphic functions in Hardy classes, *Geometric Complex Analysis*, (ed. by J. Noguchi and T. Ohsawa), International Press, 89-107, (1996).

29. Commutation properties and Lipschitz estimates for the Bergman and Szegö projections (with A. Bonami and S. Grellier), Math. Zeit., **223**, 275-302, (1996).

30. On the shared values of entire functions and their partial differential polynomials in $\mathbf{C^n}$ (with C. Berenstein and B.Q. Li), Forum Math., **8**, 379-396, (1996).

31. Estimates for spectral projection operstors of the sub-Laplacain on the Heisenberg group (with J. Tie), J. d'Analyse Mathematique, **71**, 315-347, (1997).

32. Sobolev and Lipschitz estimates for weighted Bergman projections, (with B.Q. Li), Nagoya Math. J., **147**, 147-178, (1997).

33. Determining a surface breaking crack from steady-state electrical boundary measurements - Numerical results, (with C. Berenstein and E. Wang), Inverse Problems in Engineering, **5**, 279-308, (1997).

34. Determining a surface breaking creak from steady-state electrical boundary measurements - Reconstruction method, (with C. Berenstein and E. Wang), Rend. Istit. Mat. Univ. Trieste, **29**, 63-92, (1998).

35. Application of Laguerre calculus to the $\bar{\partial}$-Neumann problem in the non-isotropic Siegel domain, *"Proceedings of Interactions on Harmonic Analysis, Partial Differential Equations and Several Complex Variables"*, (ed. by H. Arai), Tohoku University Press, 19-43, (1998).

36. Hardy spaces, BMO, and elliptic boundary value problems on a smooth domain in $\mathbf{R^n}$, (with G. Dafni and E.M. Stein), Trans. Amer. Math. Soc., **351**, 1605-1666, (1999).

37. The uniqueness problem and meromorphic solutions of partial differential equations, (with C. Berenstein and B.Q. Li), J. d'Analyse Mathematique, **77**, 51-68, (1999).

38. Laguerre calculus and its applications to probability measures on $\mathbf{H}^n$, (with C.R. Hwang), *Trends in Probability and Related Analysis*, (ed. N. Kono and N. Sheih), World Scientific, 83-102, (1999).

39. On the boundedness of multipliers, commutators and the second derivatives of Green's operators on $H^1$ and $BMO$, (with S.Y. Li), Annali della Scuola Normale Superiore di Pisa, Classe di Scienze, **28**, 341-356, (1999).

40. Uniqueness problems for entire and meromorphic functions (with B. Q. Li and C. Berenstein), *"Recent Developments in Complex Analysis– Proceedings of the First ISSAC Congress"*, (ed. by R. Gilbert), Kluwer Academic Publishers, 39-45, (1999).

41. An identity related to the Riesz transforms on the Heisenberg Group (with J. Tie), Complex Variables, **40**, 395-421, (2000).

42. Applications of Laguerre calculus to Dirichlet problems of the Heisenberg Laplacian (with J. Tie), *Finite or Infinite Dimensional Complex Analysis–Proceedings of the Second ISSAC Congress*, (ed. J. Kajiwara and Zhong Li), Marcel Dekker, Inc., New York, 47-54, (2000).

43. Fu Jen Lecture in Hardy spaces, Taiwanese Journal of Mathematics, **4** #3, 321-363, (2000).

44. A note on weighted Bergman spaces and Cesáro operator (with G. Benke), Nagoya Math. J., **159**, 25-43, (2000).

45. Some differential operators related to the Heisenberg sub-Laplacian (with J. Tie), Mathematische Nachrichten, **221**, 19-39, (2001).

46. A Berry-Esséen bound for the product-limit estimator under left-truncation and right-censoring, (with Y.T. Hwang), Applicable Analysis, **78**, 193-206, (2001).

47. Estimates for powers of sub-Laplacian on the non-isotropic Heisenberg group (with J. Tie), J. Geometric Analysis, **10**, 653-677, (2001).

48. Applications of Laguerre calculus to harmonic analysis on the Heisenberg group, *"Aspects of Mathematics–Algebra, Geometry and Several Complex Variables"*, (Ed. by N. Mok), 29-74, (2002).

49. On the boundary of Fourier and complex analysis: the Pompeiu problem, Taiwanese J. Math., **6**, 1-37, (2002).

50. A zeta function associated to sub-Laplacian on the unit sphere in $\mathbf{C}^n$, (with S.Y. Li), J. d'Analyse Math., **86**, 25-48, (2002).

51. A generalized Kantorovich method and its application to free in-plane plate vibration problem, (with G. Wang and N. Wereley), Applicable Analysis, **80**, 493-523, (2002).

52. Harmonic analysis and subriemannian geometry on Heisenberg groups, (with Peter Greiner), Bulletin of the Institute of Mathematics, Academia Sinica., **30**, 153-190,(2002).

53. Moment conditions for Pompeiu problem extended to general radial surfaces, (with W. Eby), *"Microlocal Analysis and Complex Fourier Analysis"*, World Scientific, (Ed. by T. Kawai and K. Fujita), 44-66, (2002).

54. On the recursive sequence $x_{n+1} = \alpha + \frac{\beta x_{n-1}}{1+g(x_n)}$, (with S. Stecić), Applicable Analysis, **82**(2), 145-156, (2003).

55. Estimates of hyperbolic equations in Hardy spaces, (with Y.S. Lee), Math. Nachr., **254-255**, 1-29, (2003).

56. Analysis of sandwich plates with viscoelastic damping using two-dimensional plate modes, (with G. Wang and N. Wereley), Presented at AIAA Structures, Strutual Dynamics, and Materials Conference, Danver, paper No. 1366, CO, 2003, *Journal of American Institute of Aeronautics and Astronautics*, **41**(5), 924-932, (2003).

57. The generalized Cesáro operator on the unit polydisk, (with S. Stević), Taiwanese J. Math., **7** #2, 293-308, (2003).

58. Moment Versions of the Morera Problem in $\mathbf{C}^n$ and $\mathbf{H^n}$, (with C. Berenstein, W. Eby and L. Zalcman), Advances in Applied Math., **31**, 263-300, (2003).

59. On the maximum of sums of sines, (with G. Benke), J. Math. Analysis and Applications, **284**, 647-655, (2003).

60. Mathematical analysis of pricing of lookback performance options, (with E. Chang and H. Fan), Applicable Analysis, **82**, # 10, 937-959, (2003).

61. Estimates of an integral operator on function spaces, (with S. Stević), Taiwanese J. Math., **7**, # 3, 423-432, (2003).

62. Bergman projection and weighted holomorphic functions, (with R. Gilbert and J. Tie), *Reproducing kernel on Hilbert spaces, positivity, function theory, system theory and related topics*, (Ed. by D. Alpay), Birkhäuser series "Operator Theory: Advances and Applications", **143**, 147-169, (2003).

63. Analysis and applications of extended Kantorovich-Krylov method, (with G. Wang and N. Wereley), Applied Analysis, **82**, #7, 713-740, (2003).

64. A note on generalized Cesáro operators, (with R. Gilbert and G. Wang), *Proceedings of Acoustics, Mechanics and the related topics of Mathematical Analysis*, World Scientific, (ed. by A. Wirgin), 92-99, (2003).

65. The Morera problem in Clifford algebras and the Heisenberg group, (with C. Berenstein and W. Eby), *Clifford Algebras Applications to Mathematics, Physics, and Engineering*, Progress in Mathematical Physics, (ed. R. Ablamowicz), **34**, 1-30, (2004).

66. On the difference equation $x_{n+k+1} = \frac{\alpha+\beta x_n}{1+g(x_{n+k})}$, (with D.-M. Nhieu), Applicable Analysis, **83**, #6, 579-598, (2004).

67. Real and complex Hamiltonian mechanics on some subRiemannian manifolds, (with O. Calin and P. Greiner), Asian J. Math., **8**, #1, 137-160, (2004).

68. On a step $2(k + 1)$ subRiemannian manifold, (with O. Calin and P. Greiner), Journal of Geometric Analysis, **14**, #1, 1-18, (2004).

69. A note on Hörmander's strongly coprime condition, (with C. Berenstein and W. Eby), Complex Variables, **49**, #7-9, 473-485, (2004).

70. Analysis and geometry on Heisenberg groups, (with P. Greiner), *"Proceedings of Second International Congress of Chinese Mathematicians"*, (Ed. by C. Lin and S.T. Yau), New Studies in Advanced Mathematics, International Press, 379-405, (2004).

71. A note on Isoperimetric and Sobolev inequalities, (with J. Xiao), Archives of Inequalities and Applications, **2**, #4, 427-434, (2004).

72. $L^p$ results for the Pompeiu problem with moments on the Heisenberg group, (with C. Berenstein and W. Eby), J. Fourier Analysis and Its Applications, **10**, #6, 545-571, (2004).

73. A note on Hermite and subelliptic operators, (with J. Tie), Acta Mathematica Sinica, English Series, **21**, #4, 803-818, (2005).

74. Analysis of bending vibration of rectangular plates using $2D$ plate modes, (with G. Wang and N. Wereley), AIAA Journal of Aircraft, **42**, #2, 542-550, (2005).

75. Subriemannain geometry and subelliptic partial differential equations, (with P. Greiner and J. Tie), *"Geometric Function Theory in Several Complex Variables"*, (Ed. by C. FitzGerald and S. Gong), World Scientific, 1-36, (2005).

76. Geometric mechanics on a step 4 subRiemannian manifolds, (with O. Calin), Taiwanese J. Math., **9**, #2, 261-280, (2005).

77. Geometric Analysis on SubRiemannian Manifolds, (with O. Calin and P. Greiner), *Advances in Analysis: Proceedings of the 4th ISAAC Congress*, World Scientific, (ed. by H.G. Begehr, R.p. Gilbert and M.W. Wong), 17-38, (2005).

78. Geometric analysis on a family of pseudoconvex hypersurfaces, (with O. Calin), Complex Variables: Theory and Applications, **50**, #7-11, 803-835 (2005).

79. On the geometry induced by a Grusin operator, (with O. Calin, P. Greiner and Y. Kannai), *Proceedings of International Conference on Complex Analysis & Dynamical Systems*, (ed. by L. Karp and L. Zalcman), Contemporary Math., **382**, Amer. Math. Soc., 89-111, (2005).

80. Hermite operator on the Heisenberg group, (with O. Calin and J. Tie), *Harmonic Analysis, Signal Proceedings and Complexity*, (ed. by I. Sabadini, D. Struppa and D. Walnut), Progress in Math. **238**, Birkhäuser, Boston, Massachusetts, 37-54, (2005).

81. A div-curl lemma in BMO on a domain, (with G. Dafni and C. Sadosky), *Harmonic Analysis, Signal Proceedings and Complexity*, (ed. by I. Sabadini, D. Struppa and D. Walnut), Progress in Math. **238**, Birkhäuser, Boston, Massachusetts, 55-65, (2005).

82. Geometric mechanics on the Heisenberg group, (with O. Calin and P. Greiner), Bulletin of Academia Sinica, **33**, #3, 185-252, (2005).

83. The Geometry on a step 3 Gruhsin operator, (with O. Calin), Arbeitsgruppe Partielle Differentialgeichungen und komplexe Analysis, Universität Potsdam, ISBN 1437-739X, Applicable Analysis, **84**, #2, 111-129, (2005).

84. Mathematical analysis of the two-color partial rainbow options, (with E.C. Chang, H. Fan and D.-M. Nhieu), Applicable Analysis, **84**, #7, 737-757, (2005).

85. A note on weighted bergman spaces and the Cesáro operators II, (with S. Stević), Nagoya Math. Journal, **180**, 77-90, (2006).

86. Functions of bounded mean oscillation, (with C. Sadosky), Taiwanese J. Math., **10**, #3, 573-601, (2006).

87. Applications of the Poincaré inequality to extended Kantorovich method, (with T. Nguyen, G. Wang and N. Wereley), Journal Inequalities and Applications, **2006**, 1-21, (2006).

88. Hausdroff operator on the unit polydisk in $\mathbf{C}^n$, (with R. Gilbert and S. Stević), Complex Variables and Elliptic Equations, **51**, #4, 329-345, (2006).

89. Geometric analysis on quaternion $\mathbf{H}$-type groups, (with I. Markina), J. Geometric Analysis, **16**, #2, 265-294, (2006).

90. Laguerre Expansion on the Heisenberg group and Fourier-Bessel Transform on $\mathbf{C}^n$, (with P. Greiner and J. Tie), Science of China, Series A, **49**, #11, 1722-1739, (2006).

91. Mathematical analysis of fly fishing rod static and dynamic response, (with G. Wang and N. Wereley), *Differential & Difference Equations and Applications*, (Ed. R. Agarwal and K. Perera), 287-297, (2006).

92. Periodic solutions for a family of Euler-Lagrange systems, (with O. Calin and Stephen S.T. Yau), Asian J. Math., **11**, #1, 69-88, (2007).

93. Fundamental solutions for Hermite and subelliptic operators, (with O. Calin and J. Tie), J. d'Analyse Math., **100**, 223-248, (2007).

94. Fundamental solutions for a family of sub-elliptic PDEs, (with O. Calin and S. Fricke) Pure and Applied Mathematics Quarterly, **3**, #2, 393-415, (2007).

95. Anisotropic quaternion Carnot groups: geometric analysis and Green's function, (with I. Markina), Advances in Applied Math., **39**, 345-394, (2007).

96. Tauberian theorem for $\mathbf{m}$-spherical transforms on the Heisenberg group, (with W. Eby), Mathematische Nachrichten, **280**, #8, 815–837, (2007).

97. New inequalities on fractal analysis and their applications, (with Y. Xu), J. Ineq. & Appl., Vol**2007**, Article ID 26249, 1-17, (2007).

98. Pompeiu problem for complex ellipsoids on the Heisenberg group, (with W. Eby), Bulletin of the Institute of Math., Academia Sinica, New Series, **2**, #3, (2007).

99. Weighted scale estimates for Calderón-Zygmund type operators, (with J. Li and J. Xiao), Contemporary Math., Amer. Math. Soc., **445**, 61-70, (2007).

100. Isometric embeddings of subRiemannian manifolds in $\mathbf{R}^m$, (with O. Calin), Advanced Studies in Contemporary Math., **15**, #1, 21-36, (2007).

101. On some integral operators on the unit polydisk and the unit ball, (with S. Li and S. Stevic), Taiwanese J. Math. **11**, #**5**, 1251–1285, (2007).

102. Geometric Analysis on anisotropic quaternion Carnot groups, (with I. Markina), published in Russian in Dokledy Akademii Nauk, **418**, #6, 731-736; Doklady Mathematics, **77**, #1, 124-129, (2008).

103. Subelliptic PDEs and subRiemannian geometry, (with P. Greiner), *"Proceedings of Third International Congress of Chinese Mathematicians"*, (Ed. S.T. Yau and Z. Xin), AMS/IP Studies in Advanced Mathematics, **42**, International Press, 223-237, (2008).

104. Quaternion $H$-type group and differential operator $\Delta_\lambda$, (with I. Markina), Science in China, Series A: Mathematics, **51**, #**4**, 523-540, (2008).

105. Sub-Lorentzian geometry on anti-de sitter space, (with I. Markina, and A. Vasilév), J. Math. Pures Appl., **90**, 82-110, (2008).

106. Generalized Calderón-Zygmund operators on homogeneous groups and applications, (with Ming-Yi Lee), Applicable Analysis, **87**, #5, 531-554 (2008).

107. SubRiemannian geometry, a variational approach, (with O. Calin), Journal of Differential Geometry, **80**, #1, 23-43 (2008).

108. Pompeiu problem for sets of higher codimension, in Euclidean and Heisenberg settings, (with W. Eby), Taiwanese J. Math., **12**, #**9**, 2619-2640, (2008).

109. Geometric analysis on $H$-type groups related to division algebras, (with O. Calin and I. Markina), Mathematische Nachrichten, **282**, #**1**, 44-68, (2009).

110. SubRiemannian geometry on the sphere $\mathbf{S}^3$, (with O. Calin and I. Markina), Canadian J. Math., **61**, #**4**, 821-839, (2009).

111. Bergen Lectures on $\bar\partial$-Neumann problem, to appear in *"Analysis and Mathematical Physics"*, Trends in Mathematics, Birkhäuser Verlag Basel/Switzerland, 77-106, 2009.

112. Generalized Hamilton-Jacobi equation and heat kernel on step two nilpotent Lie groups, (with O. Calin and I. Markina), *"Analysis and Mathematical Physics"*, Trends in Mathematics, Birkhäuser Verlag Basel/Switzerland, 49-76, 2009.

113. Sub-Riemannian geodesics on the 3-D sphere, (with I. Markina, and A. Vasilév), Complex Analysis and Operator Theory, **3**, #**2**, 361-377, (2009).

114. The heat kernel for gravitational potential operators in one and two variables, (with O. Calin), Pure and Applied Mathematics Quarterly, **6**, #**3**, 677-692, (2010).

115. Laguerre calculus and Paneitz operator on the Heisenberg group, (with S.C. Chang and J. Tie), Science in China, Series A, **52**, #**12**, 2549-2569, (2009).

116. Subelliptic zeta function on the unit sphere in $\mathbf{C}^{n+1}$ and Isospectral problem, (with S.K. Yeung), Science in China, Seris A, **52**, #**12**, 2570-2589, (2009).

117. Geometric mechanics on product Heisenberg groups, (with T.H. Chang and J.S. Hu), Applicable Analysis, **88**, #**2**, 243-283, (2009).

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119. A div-curl lemma for local BMO, (with G. Dafni and Y. Hong), Proceedings of AMS, **137**, 3369-3377, (2009).

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121. Geometric analysis on a family of pseudoconvex hypersurfaces, (with Stephen S.T. Yau), *"Recent Advances in Geometric Analysis"*, ALM **11**, Higher Education Press and International Press, Beijing-Boston, 61-99, (2009).

122. Schrödinger equation with quartic potential and nonlinear filtering problem, (with K.P. Lin and Stephen S.T. Yau), Proceedings of the 48th IEEE Conference on Decision and Control, Shanghai, P.R. China, December 16-18, 8089-8094, (2009).

123. A geometric formula for the fundamental solution of the Kohn Laplacian, (with P. Greiner and J. Tie), to appear in the *"Proceedings of 4th International Congress of Chinese Mathematicians"*, (Ed. S.T. Yau and K. Liu), New Studies in Advanced Mathematics, International Press, Cambridge, Massachusetts, (2010).

124. Boundedness of commutators of singular integrals with Lipschitz functions on product spaces, (with D. Yang and Y. Zhou), Journal of Mathematical Society of Japan, **62**, #**1**, 321-353, (2010).

125. Nonhomogeneous div-curl decompositions for local Hardy spaces on a domain, (with G. Dafni and Y. Hong), *Hilbert Spaces of Analytic Functions*, CRM Proc. Lecture Notes, **51**, Amer. Math. Soc., Providence, RI, 53-63, (2010).

126. Pompeiu problems on product of Heisenberg groups, (with W. Eby), Complex Analysis and Operator Theory, **4**, #**3**, 619-683, (2010).

127. Stochastic trigonometry and stochastic invariants, (with O. Calin), Journal of Nonlinear Analysis and Convex Analysis, **11**, #**1**, 157-174, (2010).

128. Non-holonomic system and subRiemannian geometry, (with O. Calin and Stephen S.T. Yau), Communications in Information and Systems, **10**, #**4**, 293-316, (2010).

129. Modified action and heat kernel on the 3-D subRiemannian sphere, (with I. Markina, and A. Vasilév), Asian J. Math., **14**, #**4**, 439-474, (2010).

130. On a class of nilpotent distributions, (with O. Calin), Taiwanese Journal of Mathematics, **15**, #**3**, (2011).

131. Non-Connectivity example in subRiemannian geometry, (with O. Calin), Complex Variables and Elliptic Equations, **56**, #**1-4**, 35-47, (2011).

132. Stochastic regression in terms of Brownian motion, (with O. Calin and J. Hu), *Variational Analysis and Related Topics*, Applicable Analysis, **90**, #**5-6**, 879-900, (2011).

133. Variational analysis and related topics, (with B. Mordukhovich and J.C. Yao), *Variational Analysis and Related Topics*, Applicable Analysis, **90**, #**5-6**, 861-864, (2011).

134. Heat Kernels for differential operators with radical function coefficients, Taiwanese Journal of Mathematics, **15**, #**4**, 1629-1636, (2011).

135. Geometric analysis on generalized Hermite operators, (with S.Y. Feng), Advances in Applied Mathematics, **47**, #**4**, 710-771, (2011).

136. Mathematical modeling and analysis of Asian options with stochastic strike price, (with O. Calin and B. Alshamary), Applicable Analysis, **91**, #**1**, 91-104, (2012).

137. On the geometry induced by a class of degenerate elliptic operators, (with O. Calin, J.S. Hu and Y. Li), Journal of Nonlinear Analysis and Convex Analysis, **12**, 309-340, (2011).

138. Geodesics and distance respecting Hopf fibration of $n$-spheres, (with I. Markina, and A. Vasilév), Journal of Geometry & Physics, **61**, #**6**, 986-1000, (2011).

139. SubRiemannian Geodesics in Grushin Plane, (with Y. Li), Journal of Geometric Analysis, **22**, #**3**, 800-826, (2012).

140. Heat kernels for a class of degenerate elliptic operators using stochastic method, (with O. Calin, J.S. Hu and Y. Li), Complex Variables and Elliptic Equations, **57**, #**2-4**, 155-168, (2012).

141. Description of entire solutions of eiconal type equations, (with B.Q. Li), Canadian Mathematical Bulletin, **55**, #**2**, 249-259, (2012).

142. Deconvolution for the Pompeiu problem on the Heisenberg group, (with W. Eby and E. Grinberg), *The Mathematical Legacy of Leon Ehrenpreis*, (ed. by I. Sabadini and D. Struppa), Springer Proceedings in Mathematics, #**16**, 61-94, (2012).

143. On the heat kernel of a left invariant elliptic operator, (with O. Calin and Y.Li), *Excursions in Harmonic Analysis: The February Fourier Talks at the Norbert Wiener Center*, #**2**, (ed. by T. Andrews, R. Balan, J. Benedetto, W. Czaja, and K. Okoudjou), Springer-Verlag, New York, (2013).

144. Weighted local Orlicz-Hardy spaces on domains and their applications in inhomogeneous Dirichlet and Neumann problems, (with J. Cao, D. Yang and S. Yang), Trans. AMS, **365**, #**9**, 4729-4809, (2013).

145. The positivity of the heat kernel on Heisenberg group, (with C.H. Chang, P. Greiner and H.P. Lee), Analysis and Applications, Published on line: DOI: 10.1142/S021953051350019, **11**, #**5**, 1-16, (2013).

146. Boundedness of Generalized Riesz Transform on Orlicz-Hardy Spaces Associated to Operators, (with J. Cao, D. Yang and S. Yang), Integral Equations and Operator Theory, **76**, 225-283, (2013).

147. Global connectivity and optimization on an infinite step distribution, (with O. Calin and B. Alshamary), Advances in Applied Mathematics, **50**, #**4**, 634-644, (2013).

148. Integrability conditions for the Grushin and Martinet distributions, (with O. Calin and M. Eastwood), Bulletin of the Institute of Mathematics, Academia Sinica, **8**, #**2**, 159-168, (2013).

149. Quantisation on a manifold with singular edge, (with N. Habal and W. Schulze), J. Pseudo-differential Op. Appl., **4**, #**3**, 317-343, (2013).

150. On Cauchy-Szegö kernel for quaternionic Siegel upper half space, (with I. Markina and W. Wang), Complex Analysis and Operator Theory, published online: DOI 10.1007/s11785 -012-0282-2, **7**, #**5**, 1623-1654, (2013).

151. Geometric Analysis on Ornstein-Uhlenbeck Operators with Quadratic Potentials, (with S.Y. Feng), to appear in Journal of Geometric Analysis, Published on line: DOI: 10.1007/s12220-012-9370-9, (2013).

152. Heat Kernels for a family of Grushin operators, (with Yutian Li), to appear in Methods and Applications of Analysis, (2013).

153. Fractional integrals on weighted Orlicz-Hardy spaces, (with J. Cao, D. Yang and S. Yang), Mathematical Methods in the Applied Sciences, **36**, 2069-2085, (2013).

154. Newtons method for variational inequality problems: Smales point estimate theory under the $\gamma$-condition, (with J. Wang and J. Yao), to appear in Applicable Analysis, published online: DOI 10.1080/00036811.2013.854332, (2013).

155. Integrability conditions for Heisenberg and Grushin type distributions, (with O. Calin and M. Eastwood), to appear Analysis & Mathematical Physics, (2014).

156. The edge algebra structure of the Zaremba problem, (with N. Habal and W. Schulze), (76 pages), to appear in J. Pseudo-differential Op. Appl., (2014).

**b. Preprints**

1. Weak Hardy spaces $WH_L^p(\mathbf{R}^n)$ associated to operators satisfying $k$-Davies-Gaffney estimates, (with J. Cao, H. Wu, and D. Yang), preprint, (2013).

2. $L^q$-Extensions of $L^p$-Spaces by Fractional Diffusion Equations, (with J. Xiao), preprint, (2013).

3. Calabi-Yau theorem and Hodge-Laplacian heat equation in a closed strictly pseudo convex CR manifold, (with S.C. Chang and J. Tie), preprint, (2013).

4. Boundedness of second order Riesz transforms associated to Schrödinger operators on Musielak-Orlicz-Hardy spaces, (with J. Cao, D. Yang and S. Yang), preprint, (2013).

5. Poincaré's Lemma on the Heisenberg Group, (with O. Calin and J. Hu), preprint, (2013).

6. Asymptotics for heat kernels of subLaplacian on Heisenberg group, (with Yutian Li), preprint, (2014).

**c. Books**

1. *Laguerre Calculus on the Heisenberg Group*, (with C. Berenstein and J. Tie), AMS/IP series in Advanced Mathematics, #**22**, published by the American Mathematics Society and International Press, Cambridge, Massachusetts, ISBN 0-8218-2761-8, (2001).

2. *Geometric Mechanics on Riemannian Manifolds - Applications to Partial Differential Equations*, (with O. Calin), published by Birkhäuser-Verlag, Boston, Massachusetts, ISBN 0-8176-4354-0, (2004).

3. *Geometric Analysis on the Heisenberg Group and Its Generalizations*, (with O. Calin and P. Greiner), AMS/IP series in Advanced Mathematics, #**40**, published by the American Mathematics Society and International Press, Cambridge, Massachusetts, ISBN-10: 0-8218-4319-2, ISBN-13: 978-0-8218-4319-2, (2007).

4. *Sub-Riemannian Geometry: General Theory and Examples*, (with O. Calin), Encyclopedia of Mathematics and Its Applications **126**, Cambridge University Press, Cambridge-New York-Melbourne, ISBN-10: 978-0-521-89730-3, (2009).

5. *Heat Kernels for Elliptic and Sub-elliptic Operators: Methods and Techniques*, (with O. Calin, K. Furutani and C. Iwasaki), published by Birkhäuser-Verlag, Boston, Massachusetts, ISBN 978-0-8176-4994-4, (2010).

**d. Monographs, Reports, and Extension Publications**

1. *Selected Topics in Fourier Analysis*, Hong Kong Mathematical Society Lecture Notes #**1**, The Hong Kong Mathematical Society, 1995.

2. Riesz Transforms on the Heisenberg Group, (with J. Tie), *Proceeding of Hayama Symposium on Several Complex Variables 1998*, (ed. by J. Noguchi and T. Ohsawa), 7-17, (1999).

3. Variations of the Pompeiu problim, (with C. Berenstein), *Proceeding of Hayama Symposium on Several Complex Variables 2000*, (ed. by H. Kazama and T. Ohsawa), 9-26, (2001).

4. Five Lectures on Calculus, (with Sheng Gong), *Mathmedia*, Academia Sinica, Part I: **117**, 25-35, (2006); Part II: **118**, 12-27, (2006); Part III: **119**, 31-41, (2006); Part IV: **120**, 20-31, (2006); Part V: **121**, 17-29 (2007).

5. Five Lectures on Linear Algebra, (with Sheng Gong), *Mathmedia*, Academia Sinica, Part I: **122**, 21-31, (2007); Part II: **123**, 26-49, (2007); Part III: **124**, 43-56, (2007); Part IV: **125**, 25-47, (2007); Part V: **126**, 34-53 (2008).

5. Five Lectures on Complex Analysis, (with Sheng Gong), *Mathmedia*, Academia Sinica, Part I: **134**, 52-75, (2010); Part II: **135**, 49-73, (2010); Part III: **136**, 50-76, (2010); Part IV: **137**, 54-76, (2011), Part V: **138**, 66-90, (2011).

### e. Contracts and Grants

1. NSF Grant DMS-9000968, 1990-1992

2. NSF Grant DMS-9206185, 1992-1995

3. HKUST UGC/DAG Grant DAG95-97.SC10, 1995-1996

4. NSF Grant DMS-9622249 (joint with Carlos Berenstein), 1996-2001

5. Georgetown University Competitive Research Grant, 1999-2000; 2005-2006; 2006-2007

6. William Fulbright Research Grant, 2000-2001

7. U.S. Army Research Office under the FY96 Multidisciplinary University Research Initiative (MURI) grant in Active Control of Rotorcraft Vibration and Acoustics, (joint with Norman Wereley and Gang Wang at University of Maryland, College Park), 1996-2001

8. U.S. Army Laboratory, Applied Aviation Technology Directorate at Ft. Eustis under SBIR Phase 1 and SBIR Phase 2 grants "Structural Integrity Monitoring Systems for Helicopters", (joint with Norman Wereley and Gang Wang at University of Maryland, College Park), 2005-2008

9. Norwegian Research Council Research Grant #180275/D15, (joint with Alexander Vasiliev at the University of Bergen, Norway), 2007-2009

10. Hong Kong RGC competitive earmarked research grant #600607 (joint with Jishan Hu at Hong Kong University of Sciences & Technology), 2008-2011.

11. Air Force Office of Scientific Research (AFOSR) SBIR Phase I grant (Contract Number: FA9550-09-C-0045), (joint with Dr. Gang Wang), Oct. 2008 - June, 2009.

12. U.S. Army Research Office under the FY04 Multidisciplinary University Research Initiative (MURI) grant in Micro-Hovering Air Vehicles, (joint with Norman Wereley and Gang Wang at University of Maryland, College Park), 2004-2009.

13. Norwegian Research Council BILATGrunn (joint with Alexander Vasiliev at the University of Bergen, Norway), 2008-2009.

14. Hong Kong RGC competitive earmarked research grant #601410 (joint with Jishan Hu at Hong Kong University of Sciences & Technology), 2011-2014.

15. NSF Grant DMS-1203845, 2012-2014.

16. Multi-Year Research Grant MYRG115(Y1-L4)-FST13-QT at University of Macau, 2013-2016. Total amount: 2,216,000 MOP.

### f. Fellowships, Prizes, and Awards

1. MSRI Postdoctoral fellowship, Berkeley, 1987-1988

2. NSF Postdoctoral fellowship, 1992-1995

3. AMS-NSF Travel Award for ICM-90, Kyoto, 1990

4. AMS-NSF Travel Award for ICM-94, Zurich, 1994

5. J. William Fulbright Scholar, 2000-2001

6. Edward Bunn Award for Faculty Excellence at Georgetown University, 2002

7. Award for Excellence of Teaching at Georgetown University, 2003

8. Distinguished Alumni Award at National Tsing Hua University (Hsinchu, Taiwan), April 28, 2013

9. National Tsing Hua University Distinguish Alumni Award, April 28, 2013.

**g. Editorships, Editorial Boards, and Reviewing Activities for Journals and other Learned Publications**

1. Associate Editor, *Journal of Geometric Analysis*, 2011-Present

2. Associate Editor, *Taiwanese Journal of Mathematics*, 2004-Present

3. Associate Editor, *Applicable Analysis*, 2008-Present

4. Associate Editor, *Analysis and Mathematical Physics*, 2010-Present

5. Associate Editor, *International Journal of Mathematics and Analysis*, 2005-Present

6. Associate Editor, *Advances in Theoretical and Applied Mathematics*, 2005-Present

7. Associate Editor, *The Open Mathematics Journal*, 2007-Present

8. Associate Editor, *International Journal of Differential Equations*, 2008-Present

9. Associate Editor, *Open Journal of Applied Sciences*, 2011-Present

10. Associate Editor, *Journal of Complex Analysis*, 2012-Present

**h. Ph.D. students**

1. Emei Wang, *Studies on an elliptic inverse boundary value problem and applications to defect determination*, University of Maryland at College Park, 1996.

2. Yong-Seok Li, *Estimates of hyperbolic equations in Hardy spaces*, University of Maryland at College Park, 2002.

3. Wayne Eby, *Moment version of the Pompeiu problem on the Heisenberg group*, University of Maryland at College Park, 2003.

4. Ting-Hui Chang, *The CR Bochner identity and stable pseudoharmonic maps on pseudohermitian manifolds*, National Tsing Hus University, Hsinchu, Taiwan, 2010.

**3. Invited Talks**

1. The Asian Mathematical Conference, Hong Kong University, Hong Kong, August 1985.

2. Colloquium, SUNY at Albany, New York, December 1986.

3. Colloquium, National Tsing Hua University, Hsinchu, Taiwan, January 1987.

4. Colloquium, Washington University, St. Louis, Missouri, March, 1987.

5. Complex Analysis Seminar, Princeton University, New Jersey, May 1987.

6. American Mathematical Society Regional Meeting, University of Maryland, College Park, Maryland, April 1988.

7. Analysis Seminar, Princeton University, New Jersey, April 1988.

8. Special Year in Harmonic Analysis, Nankai University, Teinjing, China, June 1988.

9. Colloquium, Peking University, Beijing, China, July 1988.

10. Colloquium, Howard University, Washington D.C., October 1988.

11. American Mathematical Society Summer Research Institute on Several Complex Variables, UC Santa Cruz, July 1989.

12. Colloquium, Washington University, St. Louis, Missouri, May 1990.

13. Partial Differential Equations in Complex Analysis, Oberwolfach, Federal Republic of Germany, June 1990.

14. Analysis Seminar, Washington University, St. Louis, Novermber 1990.

15. Symposium in Harmonic and Complex Analysis, National Tsing Hua University, Hsinchu, Taiwan, December 1990.

16. Colloquium, George Mason University, Virginia, April 1991.

17. Analysis Seminar, University of Wisconsin, Madison, April 1991.

18. Symposium in Complex Analysis, University of Wisconsin, Madison, Wisconsin, June 1991.

19. CBMS Conference in Several Complex Variables, George Mason University, Virginia, May 1992.

20. American Mathematical Society - London Mathematical Society Joint Meeting, Cambridge, England, June 1992.

21. Conference for Professor J. Hummel, University of Maryland, College Park, April 1993.

22. American Mathematical Society Regional Meeting, Syracuse University, Syracuse, New York, September 1993.

23. Colloquium, Institute of Mathematics, Academia Sinica, Taipei, Taiwan, December 1993.

24. Colloquium, Hong Kong University, Hong Kong, April, 1994.

25. Analysis Seminar, The Hong Kong University of Science & Technology, May, 1994.

26. Colloquium, Fu Jen Catholic University, Taipei, Taiwan, June 1994.

27. Geometry Seminar, Institute of Mathematics, Academia Sinica, Taipei, Taiwan, July 1994.

28. Geometry and Algebra Seminar, John Hopkins University, Baltimore, January, 1995.

29. Third International Research Institute of Mathematical Society of Japan, Geometric Complex Analysis, Hayama, Japan, March 1995.

30. Workshop on Algebraic Geometry and Several Complex Variables II, The University of Hong Kong, Hong Kong, July 1995.

31. International Symposium on Functional Analysis and Related Topics, The City University of Hong Kong, Hong Kong, December 1995.

32. Colloquium, The Chinese University of Hong Kong, Hong Kong, March 1996.

33. 1996 Annual Meeting of Mathematical Society of Japan, Niigata University, Niigata, Japan, April 1996.

34. Colloquium, Tohoku University, Sendai, Japan, April 1996.

35. Colloquium, Fu Jen Catholic University, Taipei, Taiwan, June 1996.

36. Geometry Seminar, Institute of Mathematics, Academia Sinica, Taipei, Taiwan, June 1996.

37. International Conference on Aspects of Mathematics, The University of Hong Kong, Hong Kong, June 1996.

38. Colloquium, Institute of Mathematics, Academia Sinica, Taipei, Taiwan, July 1996.

39. Colloquium, George Mason University, Virginia, November 1996.

40. Colloquium, University of California at Irvine, November 1996.

41. Ten talks on "Analysis on the Heisenberg group", Tohoku University, Sendai, Japan, December 1996.

42. Departmental Seminar, The Hong Kong University, Hong Kong, June 1997.

43. Workshop on Algebraic Geometry and Several Complex Variables III, The University of Hong Kong, Hong Kong, July 1997.

44. Four talks on "Several Complex Variables", Academia Sinica, Taipei, July 1997.

45. Colloquium, University of Houston, Texas, October 1997.

46. Colloquium, Georgetown University, Washington D.C., November 1997.

47. Geometric Analysis Seminar, Purdue University, Indiana, November 1997.

48. Colloquium, Fu Jen Catholic University, Taipei, Taiwan, January 1998.

49. Geometric Analysis Seminar, Institute of Mathematics, Academia Sinica, Taipei, Taiwan, January 1998.

50. Colloquium, Tokyo Institute of Technology, Tokyo, Japan, January 1998.

51. Interactions of Harmonic Analysis, Partial Differential Equations and Complex Analysis, Tohoku University, Sendai, Japan, January 1998.

52. Geometric Analysis Seminar, Institute of Mathematics, Academia Sinica, Taipei, Taiwan, June 1998.

53. Colloquium, University of Tokyo, Tokyo, Japan, July 1998.

54. Harmonic Analysis and Wavelet Seminar, University of Maryland, College Park, Maryland, November 1998.

55. Analysis Seminar, University of Delaware, Newark, Delaware, December 1998.

56. Hayama Symposium on Several Complex Variables 1998, Hayama, Japan, December 1998.

57. American Mathematical Society Annual Meeting 1999, San Antonio, Texas, January 1999.

58. Colloquium, Florida International University, Miami, Florida, April 1999.

59. Colloquium, International Christian University, Tokyo, Japan, May 1999.

60. Colloquium, Institute of Mathematics, Academia Sinica, Taipei, Taiwan, June 1999.

61. Colloquium, Osaka University, Osaka University, Osaka, Japan, August 1999.

62. The 2nd Congress of International Society of Analysis, Applications and Computations, Fukuoka, Japan, August 1999.

63. 1999 Annual Meeting of Taiwanese Mathematical Society, Fu Jen Catholic University, Taipei, Taiwan, December 1999.

64. Colloquium, Fu Jen Catholic University, Taipei, Taiwan, December, 1999.

65. Colloquium, Institute of Mathematics, Academia Sinica, Taipei, Taiwan, December 1999.

66. Workshop on Algebraic Geometry and Several Complex Variables VI, The University of Hong Kong, Hong Kong, March 2000.

67. Workshop in Several Complex Variables I, Academia Sinica, Taipei, Taiwan, June 2000.

68. Theory of Hardy Spaces and Its Applications, I-VI, Fu Jen Catholic University, Taipei, Taiwan, June 2000.

69. Estimates for Singular Integral Operators in Hardy Spaces, I-IV, Fu Jen Catholic University, Taipei, Taiwan, July 2000.

70. Colloquium, McGill University, Montreal, Canada, November 2000.

71. Hayama Symposium on Several Complex Variables 2000, Hayama, Japan, December 2000.

72. Lie Group Seminar, City University of New York, New York, March 2001.

73. Workshop in Several Complex Variables II, Academia Sinica, Taipei, Taiwan, June 2001.

74. Symposium in Analysis on the Heisenberg group, Fu Jen Catholic University, Taipei, Taiwan, July 2001.

75. The RIMS Mathematical Conference on Prospect of Generalized Functions, invited speaker, Kyoto University, Kyoto, Japan, November 2001.

76. Colloquium, Fu Jen Catholic University, Taipei, Taiwan, December 2001.

77. Second International Congress of Chinese Mathematicians, invited speaker, Taipei, Taiwan, December 2001.

78. Analysis Seminar, University of Delaware, Newark, Delaware, March, 2002.

79. Acoutics, Mechanics, and the Related Topics of Mathematical Analysis, LMA/CNRS, Fréjus, France, June, 2002.

80. Workshop in Several Complex Variables III, Academia Sinica, Taipei, Taiwan, August 2002.

81. Special Colloquium, Fu Jen Catholic University, Taipei, Taiwan, August 2002.

82. International Congress of Mathematicians 2002 Satellite Conference, Geometric Function Theory in Several Complex Variables, University of Science and Technology of China, Hefei, Anhui, P.R. of China, Aug. 30-Sep. 2, 2002.

83. Special Analysis Seminar, West Virginia University, Morgantown, West Virginia, November, 2002.

84. Partial Differential Equations Seminar, George Mason University, Fairfax, Virginia, December, 2002.

85. Colloquium, Howard University, Washington DC, February 21, 2003.

86. Special Analysis Seminar, University of California, Irvine, California, May 9, 2003.

87. Invited one hour address, The Second International Conference on Complex Analysis and Dynamical Systems, Nahariya, Israel, June 9-12, 2003.

88. The Fourth Congress of International Society of Analysis, Applications and Computations, York University, Toronto, Canada, August 11-15, 2003.

89. Invited one hour address, Recent Developments in Several Complex Variables, Cauchy-Riemann Geometry, The University of Hong Kong, November 20-25, 2003.

90. Colloquium, Chung-Yuan Christian University, Chung-Li, Taiwan, December 26, 2003.

91. Workshop in Several Complex Variables IV, Academia Sinica, Taipei, Taiwan, December 29-30, 2003.

92. Colloquium, Fu Jen Catholic University, Taipei, Taiwan, December 31, 2003.

93. Colloquium, National Dong Hwa University, Hua-Lien, Taiwan, January 5, 2004.

94. Invited one hour speaker, The 12th Workshop on Differential Equations and Mathematical Analysis, National Tsing Hua University, Hisn-Chu, Taiwan, January 8-11, 2004.

95. Invited one hour address, A Workshop and Spring School of the EU Research and Training Network on Geometric Analysis, Potsdam, Germany, March 1-5, 2004.

96. Colloquium, George Mason University, Fairfax, Virginia, March 26, 2004.

97. Colloquium, University of Delaware, Newark, Delaware, April 22, 2004.

98. Invited one hour address, AARMS-CRM Workshop on Singular Integrals and Analysis on CR Manifolds, Dalhousie University, Halifax, Nova Scotia, Canada, May 3-8, 2004.

99. Invited one hour address, A Celebration of Carlos Berenstein's Mathematics: Harmonic Analysis, Signal Processing and Complexity, George Mason University, Fairfax, Virginia, May 17-20, 2004.

100. Workshop in Several Complex Variables V, Academia Sinica, Taipei, Taiwan, June 24, 2004.

101. Invited one hour address, Applied Math. Seminar, National Center for Theoretical Sciences, Hsinchu, Taiwan, June 29, 2004.

102. Colloquium, Fu Jen Catholic University, Taipei, Taiwan, July 5, 2004.

103. Colloquium, Beijing Normal University, Beijing, China, October 14, 2004.

104. Colloquium, Institute of Applied Mathematics, Chinese Academy of Sciences, Beijing, China, October 15, 2004.

105. Colloquium, Peking University, Beijing, China, October 18, 2004.

106. Colloquium, Pennsylvania State University, State College, Pennsylvania, November 4, 2004.

107. Invited One Hour Address, American Mathematical Society Regional Meeting, University of Pittsburgh, Pittsburgh, Pennsylvania, November 6, 2004.

108. Colloquium, Institute of Mathematics, The Academia Sinica, Taipei, Taiwan, December 14, 2004.

109. Invited 45-minutes Address, International Congress of Chinese Mathematicians, Chinese University of Hong Kong, Hong Kong, December 25, 2004.

110. Colloquium, Universidad Técnica Feferico Santa Maria, Valparaiso, Chile, March 10, 2005.

111. Colloquium, University of Notre Dame, South Bend, Indiana, April 20, 2005.

112. Invited One Hour Talk, Show Me Analysis Conference, University of Missouri, Columbia, Missouri, May 16, 2005.

113. Colloquium, National Kaohsiung University, Kaohsiung, Taiwan, June 15, 2005.

114. Invited One Hour Address, International Conference on Several Complex Variables, University of Sciences and Technology of China, Hefei, Anhuei, China, June 21, 2005.

115. Six Hours Lectures, National Center for Theoretical Sciences, Hsinchu, Taiwan, June 28-30, 2005.

116. Invited One Hour Address, Conference on Differential and Difference Equations and Applications, Florida Institute of Technology, Melbourne, Florida, August 4, 2005.

117. Pure Mathematics Seminar, Hong Kong University of Sciences and Technology, Hong Kong, September 12, 2005.

118. Colloquium, Towson State University, Baltimore, Maryland, December 1, 2005.

119. Seminario de Matemática, Universidad Técnica Feferico Santa Maria, Valparaiso, Chile, December 21, 2005.

120. Colloquium, University of Illinois at Chicago, Chicago, Illinois, February 22, 2006.

121. Harvard-MIT Analysis Seminar, Harvard University, Cambridge, Massachusetts, May 12, 2006.

122. Invited one hour speaker, International Conference on Several Complex Variables, The Chinese Academy of Science, Beijing, China, June 5-9, 2006.

123. Special Colloquium, Tokyo University of Sciences, Tokyo, Japan, June 23, 2006.

124. 2006 NTHU & NCTS Summer Program, Analysis on SubRiemannian Geometry, National Center for Theoretical Sciences, Hsinchu, Taiwan, June 27, 29 and July 4, 2006.

125. Special Colloquium, National Kaohsiung University, Kaohsiung, Taiwan, July 1, 2006.

126. Analysis on SubRiemannian Geometry, Institute of Mathematics, Academia Sinica, Taipei, Taiwan, July 6, 2006.

127. NCTS Workshop on Harmonic Analysis and Schrodinger Equations, National Taiwan University, Taipei, Taiwan, July 11-12, 2006.

128. Department of Mathematics Invited Seminar Series in Celebration of the 25th Anniversary of University of Macau, Macau, China, July 20, 2006.

129. Analysis Seminar, McGill University, Montrèal, Canada, November 3, 2006.

130. Colloquium, Tunghai University, Taichung, Taiwan, January 3, 2007.

131. Workshop on Geometric Analysis, National Center for Theoretical Sciences, Hsinchu, Taiwan, January 16-18, 2007.

132. Symposium on Analysis and Its Algebraic Structures, National Taitung University, Taitung, Taiwan, January 22-23, 2007.

133. Special Colloquium, Fu Jen Catholic University, Taipei, Taiwan, January 31, 2007.

134. Colloquium, Taida Institute of Mathematical Sciences, National Taiwan University, Taipei, Taiwan, February 5, 2007.

135. Geometry Seminar, Institute of Mathematical Sciences, The University of Hong Kong, Hong Kong, February 8, 2007.

136. Special Program in Analysis and Geometry, National Center for Theoretical Sciences, Hsinchu, Taiwan, March 2,9,16, 2007.

137. Workshop in Analysis and Geometry, Academia Sinica, Taipei, Taiwan, March 5-6, 2007.

138. Colloquium, Chung Yuan Christian University, Chung Li, Taiwan, March 9, 2007.

139. Colloquium, National Tsing Hua University, Hsinchu, Taiwan, March 12, 2007.

140. Colloquium, Tunghai University, Taichung, Taiwan, March 14, 2007.

141. Forum on Teaching Calculus, Fu Jen Catholic University, Taipei, Taiwan, March 19, 2007.

142. Special Program in Analysis and Geometry, National Center for Theoretical Sciences, Hsinchu, Taiwan, April 13, 2007.

143. Invited One Hour Address, Workshop in Geometric Analysis, University of Bergen, Bergen, Norway, May 4, 2007.

144. Invited 45 minutes Address, International Conference on "New Trends on Complex and Harmonic Analysis", Voss, Norway, May 7-11, 2007.

145. Invited One Hour Address, 2007 International Conference on Several Complex Variables and Complex Geometry, Xiamen University, Xiamen, China, May 28-31, 2007.

146. Invited One Hour Address, Workshop on Functional and Global Analysis, Tokyo University of Sciences, Tokyo, Japan, June 4-6, 2007.

147. Colloquium, Tamkang University, Taipei, Taiwan, June 12, 2007.

148. Colloquium, National Central University, Chungli, Taiwan, June 14, 2007.

149. Invited One Hour Address, International Conference on Geometric Analysis, National Taiwan University, Taipei, Taiwan, June 18, 2007.

150. Colloquium, Fu Jen Catholic University, Taipei, Taiwan, June 25, 2007.

151. Invited One Hour Address, Workshop in Complex Geometry, The University of Hong Kong, Hong Kong, July 10, 2007.

152. Eight lectures at summer school, Wuhan University, Wuhan, China, July 24-27, 2007.

153. Colloquium, Wuhan University of Technology, Wuhan, China, July 24, 2007.

154. Colloquium, The Chinese Academy of Sciences, Wuhan Institute of Mathematics & Physics, Wuhan, China, July 25, 2007.

155. Celebrating 10th anniversary of NCTS series of lectures, National Center for Theoretical Sciences, Hsinchu, Taiwan, July 31, 2007.

156. Special lecture on Game Theory, National Changhua Girl's High School, Changhua, Taiwan, August 6, 2007.

157. Invited speaker, American Mathematical Society Sectional Meeting, DePaul University, Chicago, Illinois, October 5, 2007.

158. Partial Differential Equations Seminar, University of Delaware, Newark, Delaware, October 25, 2007.

159. Colloquium, Worcester Polytech Institute, Worcester, Massachusetts, November 30, 2007.

160. Invited speaker, The 4th International Congress of Chinese Mathematicians, Zhejiang University, Hongzhou, China, Dec. 17-22, 2007.

161. Invited speaker, The 2007 Annual Meeting of the Taiwanese Mathematics Society, the Academia Sinica, Taipei, Taiwan, Dec. 21-24, 2007.

162. Colloquium, University of Houston, Houston, Texas, February 6, 2008.

163. Colloquium, Auburn University, Montgomery, Alabama, March 7, 2008.

164. Short Course in *Singular Integrals, Pseudo-differential Operators and Analysis on Homogeneous Groups*, National Center for Theoretical Sciences, Hsinchu, Taiwan, May 7-July 23, 2008.

165. 2008 NCTS Workshop on Harmonic and Complex Analysis, National Center for Theoretical Sciences, Hsinchu, Taiwan, May 19-20, 2008.

166. 2008 Fu Jen Forum on Analysis, Fu Jen Catholic University, Taipei, Taiwan, May 23, 2008.

167. Plenary speaker, International conference on Complex Analysis and Math. Physics, the Sophus Lie Conference Center in Nordfjordeid, Norway, June 8-14, 2008.

168. Colloquium, University of Bergen, Bergen, Norway, June 16, 2008.

169. 2008 NCTS Workshop on Geometric Analysis and Several Complex Variables, National Center for Theoretical Sciences, Hsinchu, Taiwan, June 24-25, 2008.

170. Colloquium, National Chung-Cheng University, Chiayi, Taiwan, June 27, 2008.

171. Colloquium, National Sun Yat-sen University, Kaohsiung, Taiwan, July 7, 2008.

172. Geometry Seminar, The University of Hong Kong, Hong Kong, July 17, 2008.

173. Colloquium, Institute of Mathematics, Academia Sinica, Taipei, Taiwan, July 24, 2008.

174. Colloquium, National Sun Yat-Sen University, Kaohsiung, Taiwan, December 10, 2008.

175. Public Lectures, Tung Hai University, Taichung, Taiwan, December 12 and December 14, 2008.

176. Colloquium, National Sun Yat-Sen University, Kaohsiung, Taiwan, December 17, 2008.

177. Invited speaker, Himeji Conference on Partial Differential Equations, Himeji, Japan, February 19-21, 2009.

178. Analysis Seminar, Tokyo University of Sciences, Tokyo, Japan, February 23, 2009.

179. Distinguished Colloquium, Memorial University of Newfoundland, St. John's, Canada, March 9, 2009.

180. Geometry Seminar, Taida Institute of Mathematical Sciences, National Taiwan University, Taipei, Taiwan, May 12, 2009.

181. 2009 NCTS Mini Course on Geometric Analysis, Hsinchu, Taiwan, May 11-July 29, 2009.

182. Colloquium, Department of Mathematics, Fu Jen Catholic Univesity, Taipei, Taiwan, May 20, 2009.

183. Colloquium, Department of Mathematics, National Central University, Chung-Li, Taiwan, June 18, 2009.

184. Three Colloquium Talks, School of Mathematics and Statistics, Wuhan University, Wuhan, China, July 2,3, 2009.

185. Invited address, International conference on SCV, Complex Geometry and PDEs, Wuhan University, Wuhan, China, July 7, 2009.

186. Geometry Seminar, Department of Mathematics, The University of Hong Kong, Hong Kong, July 17, 2009.

187. Conference on Value Distribution Theory and Complex Geometry, The National Center for Theoretical Sciences, Hsinchu, Taiwan, July 27-30, 2009.

188. Colloquium, Department of Applied Mathematics, National Sun Yat-Sen University, Kaohsiung, Taiwan, July 28, 2009.

189. Harmonic Analysis Section, AMS 2009 Fall Southeastern Meeting, Florida Atlantic University, Boca Raton, Florida, November 1, 2009.

190. Analysis and PDE Seminar, Department of Math., University of Delaware, Newark, Delaware, November 5, 2009.

191. Plenary speaker, 2009 Taiwan-Norway Joint Workshop on Geometric Analysis and Mathematical Physics, The National Center for Theoretical Sciences, Hsinchu, Taiwan, December 14-16, 2009.

192. Plenary speaker, The Fifth International Conference on Abstract Harmonic Analysis, National Sun Yat-Sen University, Kaohsiung, Taiwan, December 18-22, 2009.

193. Plenary speaker, 2009 Fu Jen Forum on Analysis, Department of Mathematics, Fu Jen Catholic University, Taipei, Taiwan, December 24, 2009.

194. Public Lectures, Department of Mathematics, Tung Hai University, Taichung, Taiwan, January 5, 2010.

195. Invited speaker, 2010 February Fourier Talks, University of Maryland, College Park, Maryland, February 18-19, 2010.

196. Colloquium, Department of Mathematics, Dalhousie University, Halifax, Nova Scotia, Canada, March 4, 2010.

197. 2010 NCTS Course in *"Aspects of Analysis on Model Domains in $\mathbf{C}^{n+1}$"*, National Center for Theoretical Sciences, Hsinchu, Taiwan, May 17-July 15, 2010.

198. Invited speaker, Mini-course Series and Workshop on Geometric and Complex Analysis, Taida Institute for Mathematical Sciences, National Taiwan University, Taipei, Taiwan, June 21-29, 2010.

198. Invited speaker, 2010 NCTS Workshop on Fourier Analysis and Its Applications on PDEs, National Center for Theoretical Sciences, Hsinchu, Taiwan, July 1, 2010.

199. Colloquium, Department of Applied Mathematics, National Sun Yat-Sen University, Kaohsiung, Taiwan, July 7, 2010.

200. Invited speaker, 2010 NCTS International Conference on Several Complex Variables and Complex Geometry, National Center for Theoretical Sciences, Hsinchu, Taiwan, July 9-11, 2010.

201. McGill-Concordia Analysis Seminar, Department of Mathematics, McGill University, Montréal, Canada, November 5, 2010.

202. 2010 Fu-Jen Forum on Analysis, Department of Mathematics, Fu-Jen Catholic University, Taipei, Taiwan, December 10, 2010.

203. Invited Speaker, Annual Meeting of Taiwanese Mathematical Society, National Chang-Hua Educational University, Chang-Hua, Taiwan, December 11, 2010.

203. 2010 NCTS Geometric Analysis Seminar, National Center for Theoretical Sciences, Hsinchu, Taiwan, December 13, 2010.

204. Function Spaces and Its Applications Seminar, Beijing Normal University, Beijing, China, December 20, 2010.

205. Invited speaker, The 5th International Congress of Chinese Mathematicians, Tsing Hua University, Beijing, China, December 17-22, 2010.

206. Invited speaker, 2011 Himeji Conference on Partial Differential Equations, Himeji, Japan, February 19-20, 2011.

207. Colloquium, Department of Mathematics, Auburn University, Montgomery, Alabama, March 4, 2011.

208. Invited speaker, Midwest Several Complex Variables Conference in Honor of Professors John Erik Fornaess and Steven Krantz, Washington University, St. Louis, Missouri, May 11-14, 2011.

209. Invited speaker and Organizer, 2011 NCTS Taiwan-Norway Workshop in Analysis and Applications, National Center for Theoretical Sciences, Hsinchu, Taiwan, June 7-11, 2011.

210. Invited speaker and Organizer, 2011 NCTS Special Day in Fourier Analysis, National Center for Theoretical Sciences, Hsinchu, Taiwan, June 13, 2011.

211. Special Colloquium I, Department of Mathematics, Fu-Jen Catholic University, Taipei, Taiwan, June 24, 2011.

212. Special Colloquium II, Department of Mathematics, Fu-Jen Catholic University, Taipei, Taiwan, June 27, 2011.

213. Colloquium, Department of Applied Mathematics, National Sun Yat-Sen University, Kaohsiung, Taiwan, June 29, 2011.

214. Analysis Seminar, Department of Mathematics, University of Delaware, Newark, Delaware, October 6, 2011.

215. Colloquium, Department of Mathematics, Temple University, Philadelphia, Pennsylvania, October 23, 2011.

216. Mittag-Leffler Seminar, Mittag-Lefler Institute, Swedish Royal Academy, Stockholm, Sweden, November 1, 2011.

217. Colloquium, Department of Applied Mathematics, Tunghai University, Taichung, Taiwan, December 13, 2011.

218. Invited speaker and Organizer, 2011 Fu-Jen Forum on Analysis, Fu-Jen Catholic University, Taipei, Taiwan, December 15, 2011.

219. Invited speaker and Organizer, 2011 NCTS Taiwan-Japan Joint Workshop on PDEs and Geometric Analysis, National Center for Theoretical Sciences, Hsinchu, Taiwan, December 19-21, 2011.

220. Invited speaker, 2012 Potsdam Workshop in "*Geometric and Singular Analysis*" , Potsdam, Germany, March 12-16, 2012

221. Analysis Seminar, Department of Mathematics, University of Delaware, Newark, Delaware, May 6, 2012

222. Fourier Analysis and Its Applications to Several Complex Variables, 2012 NCTS Summer Course, National Center for Theoretical Sciences, Hsinchu, Taiwan, June 29, 30 and July 6, 10, 2012.

223. Invited speaker and Organizer, International Conference on Several Complex Variables and Complex Geometry, Academia Sinica, Taipei, Taiwan, July 2-5, 9-13, 2012.

224. Special Colloquium I and II, Department of Mathematics, Fu-Jen Catholic University, Taipei, Taiwan, July 11 and July 16, 2012.

225. Special Analysis Seminar, Department of Mathematics, University of Macau, Macau, China, July 19, 2012.

226. Invited speaker, International Conference on Complex Geometry, Singularities and Related Fields, Tsinghua University, Beijing, China, August 4, 2012.

227. Special Colloquium, School of Mathematical Sciences, Beijing Normal University, Beijing, China, August 6, 2012.

228. Invited speaker and Organizer, Conference on Applied Analysis and Mathematical Biology, Department of Mathematics, University of Delaware, Newark, Delaware, August 8-9, 2012.

229. Public Lecture, Purdue University, West Lafayette, Indiana, August 24, 2012.

230. Public Lecture, University of Kentucky, Lexington, Kentucky, September 21, 2012

231. Colloquium, Department of Mathematics, Florida International University, Miami, Florida, November 6, 2012.

232. Organizer and speaker, 2013 Fu Jen Forum on Analysis, Department of Mathematics, Fu Jen Catholic University, Taipei, Taiwan, January 4, 2013.

233. Organizer and speaker, 2013 NCTS International Conference on Geometric and Singular Analysis, National Center for Theoretical Sciences, Hsinchu, Taiwan, January 7-8, 2013.

234. Colloquium, Department of Applied Mathematics, Tunghai University, Taichung, Taiwan, January 9, 2013.

235. Colloquium, Department of Mathematics, National Central University, Chungli, Taiwan, February 26, 2013.

236. Colloquium, Department of Applied Mathematics, National Sun-Yat Sen University, Kaohsiung, Taiwan, March 1, 2013.

237. Special Seminar in Analysis, School of Mathematics and Statistics, Wuhan University, Wuhan, China, March 28-30, 2013.

238. Colloquium, Wuhan Institute of Physics and Mathematics, The Chinese Academy of Sciences, Wuhan, China, April 2, 2013.

239. Colloquium, Department of Mathematics, Soochow University, Taipei, Taiwan, April 24, 2013.

240. Invited one hour speaker, Conference on Complex Geometry, Department of Mathematics, Hong Kong University, Hong Kong, June 25-28, 2013.

241. Organizer and speaker, 2013 NCTS Workshop in Geometric Analysis, SCV and Related Topics, National Center for Theoretical Sciences, Hsinchu, Taiwan, July 25, 2013.

242. Colloquium, Department of Mathematics, Auburn University, Montgomery, Alabama, August 23, 2013.

243. Colloquium, Department of Mathematics, Tokyo University, Tokyo, Japan, November 8, 2013.