

Hsiang-Hsi “Sean” Kung (孔祥曦)

Curriculum Vitae

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Quantum Matter Institute, University of British Columbia, Vancouver, BC V6T1Z4, Canada



EDUCATION

Ph.D., Physics , Rutgers University (Advisor: Dr. Blumberg, Girsh)	2012-17
Dissertation: “ <i>Collective excitations in the Antisymmetric Channel of Raman Spectroscopy</i> ”	
M.S., Physics , National Taiwan University (Advisor: Dr. Lee, Wei-Li)	2009-11
Thesis: “ <i>Transport Properties of Some Layered Compounds</i> ”	
B.S., Physics , National Taiwan University	2004-08

AWARDS

SBQMI Postdoctoral Fellowship , University of British Columbia	2017-present
QuantEmX Scientist Exchange Award , ICAM-I2CAM	2017
DCMP Travel Award , American Physical Society	2017
FGSA Travel Award , American Physical Society	2016
Theodore E. Madey Award for Best Oral Presentation , 29 th Annual LSM Symposium	2015
University and Louis Bevier Graduate Fellowship , Rutgers University	2015-16
David C. Langreth Graduate Development Award , Rutgers University	2014

PROFESSIONAL EXPERIENCE

Graduate Research Assistant, Rutgers University	2013-17
Graduate Teaching Assistant, Rutgers University	2012
Graduate Mentor for Aresty and REU Research Program, Rutgers University	2014 – 16
Graduate Research Assistant, Academia Sinica, Institute of Physics	2011 – 12

INVITED TALKS

- Correlated Electron and Mesoscopics seminars, University of Illinois, USA (2016 Urbana-Champaign)
- Quantum Matter Institute, University of British Columbia, Canada (2016 Vancouver)
- Institute of Physics, Academia Sinica, Taiwan (2015 Taipei)
- Gordon Research Seminar: Superconductivity, Hong Kong (2015 Hong Kong)

RESEARCH INTEREST

Experimental condensed matter physics:

Raman spectroscopy, photo-luminescence spectroscopy, heavy fermions, strongly correlated electron system, topological insulators, low dimensional quantum materials

WORKSHOP / CONFERENCE / SCHOOL

Workshop on Spins, Valleys, and Topological States in 2D and Layered Materials (2017 Columbus)
Workshop on Exp. and Th. of the Electronic Structure of Correlated f-electron Materials (2016 Philadelphia)
Gordon Research Conference: Superconductivity (2015 Hong Kong)
Gordon Research Conference: Correlated Electron System (2016 South Hadley)
APS March Meeting (2012 Boston, 2013 Baltimore, 2014 Denver, 2016 Baltimore, 2017 New Orleans)
Rutgers Annual Laboratory for Surface Modification Symposium (2015, 2016, 2017)
Summer School on New Physics due to Spin-Orbit Coupling in Correlated Electron Systems (2015 Cargèse)

PUBLICATIONS

- (1) **H.-H. Kung**, S. Maiti, X. Wang, S.-W. Cheong, D.L. Maslov and G. Blumberg, “Chiral Spin Mode on the Surface of a Topological Insulator”, [Phys. Rev. Lett. 119, 136802 \(2017\)](#).
Media coverage: [EurekAlert!](#) , [Phys.Org](#) , [Science Daily](#) , [Nanowerk](#) , [Long Room](#)
 - (2) T.-H. Chen, **H.-H. Kung**, C.-R. Wang, C.-T. Hsieh, and W.-L. Lee, “Evidence for enhanced phase fluctuations in nanostructured niobium thin films”, [Phys. Rev. B 96, 020506\(R\) \(2017\)](#).
 - (3) **H.-H. Kung**, M. Salehi, X. Wang, I. Boulares, A. F. Kemper, N. Koirala, M. Brahlek, P. Lostak, C. Uher, R. Merlin, S.-W. Cheong, S. Oh, and G. Blumberg, “Surface vibrational modes of the topological insulator Bi₂Se₃ observed by Raman spectroscopy”, [Phys. Rev. B 95, 245406 \(2017\)](#).
 - (4) **H.-H. Kung**, S. Ran, N. Kanchanavatee, V. Krapivin, A. Lee, J. A. Mydosh, K. Haule, M.B. Maple, G. Blumberg, “Analogy Between the ‘Hidden Order’ and the Orbital Antiferromagnetism in URu₂Si₂”, [Phys. Rev. Lett. 117, 227601 \(2016\)](#).
 - (5) D. Mou, A. Sapkota, **H.-H. Kung**, V. Krapivin, Y. Wu, A. Kreyssig, X. Zhou, A.I. Goldman, G. Blumberg, R. Flint and A. Kaminski, “Discovery of an unconventional charge density wave at the surface of K_{0.9}Mo₆O₁₇”, [Phys. Rev. Lett. 116, 196401 \(2016\)](#).
 - (6) **H.-H. Kung**, R. E. Baumbach, E. D. Bauer, V. K. Thorsmølle, W.-L. Zhang, K. Haule, J. A. Mydosh and G. Blumberg, “Chirality density wave of the ‘hidden order’ phase in URu₂Si₂”, [Science 347, 1339 \(2015\)](#).
Media coverage: [EurekAlert!](#) , [Materials Today](#) , [NSF](#)
 - (7) H.-C. Hsu, W.-L. Lee, J.-Y. Lin, B.-L. Young, **H.-H. Kung**, J. Huang and F.-C. Chou, “Spin-glass transition and giant paramagnetism in heavily hole-doped Bi₂Sr₂Co₂O_y”, [J. Phys. Soc. Jpn 83, 024709 \(2014\)](#).
 - (8) F.-T. Huang, M.-W. Chu, **H.-H. Kung**, W.-L. Lee, R. Sankar, S.-C. Liou, K.-K. Wu, Y.-K. Kuo, and F.-C. Chou, “Nonstoichiometric doping and Bi antisite defect in single crystal Bi₂Se₃”, [Phys. Rev. B 86, 081104 \(2012\)](#).
 - (9) C.-C. Ho, T.-W. Hsieh, **H.-H. Kung**, W.-T. Juan, K.-H. Lin and W.-L. Lee, "Reduced saturation magnetization in cobalt antidot thin films prepared by polyethylene oxide-assisted self-assembly of polystyrene nanospheres", [Appl. Phys. Lett. 96, 122504 \(2010\)](#).
 - (10) S.-F. Wu, W.-L. Zhang, D. Hu, **H.-H. Kung**, A. Lee, H.-C. Mao, P.-C. Dai, H. Ding, P. Richard and G. Blumberg, “Collective excitations of dynamic Fermi surface deformations in BaFe₂(As_{0.5}P_{0.5})₂”, (*in submission*), [arXiv:1607.06575 \[cond-mat.supr-con\]](#).
 - (11) **H.-H. Kung**, L. S. Levitov, X. Wang, M. Salehi, N. Koirala, M. Brahlek, A. Lee, S.-W. Cheong, S. Oh and G. Blumberg, “Polarization preserving exciton emission observed in the topological insulator Bi₂Se₃”, (*in preparation*).
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REFERENCES

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