

Worawat Meevasana

Curriculum Vitae

Education

Currently in Ph.D. program in physics at:

Stanford University, Stanford, CA, USA

Research Advisor: Prof. Z.-X Shen, zxshen@stanford.edu

Expected date of graduation: Dec 2008

University of California, Santa Barbara (UCSB), CA, USA

B.Sc. in Physics, June 2002

Research Advisor: Prof. Guenter Ahlers, guenter@physics.ucsb.edu

Research Experience

Research assistant, Stanford University, April 2003 – present:

Supervised by **Prof. Z.-X. Shen**

Research topic: - Angle-resolved photoemission studies of the doping-dependent effects in the single-layer high-Tc superconductor, $\text{Bi}_2\text{Sr}_2\text{CuO}_6$
- Angle-resolved photoemission studies of other cuprate superconductors and ruthenate ($\text{Ca}_{2-x}\text{Na}_x\text{CuO}_2\text{Cl}_2$, Sr_2RuO_4)

Research assistant, UCSB, June 2000 – June 2002:

Supervised by **Prof. Guenter Ahlers**

Research topic: - Study of Rayleigh-Benard convection (a pattern-forming nonlinear system), emphasizing on ring convective patterns in an elliptical boundary

Teaching Experience

- Teaching assistant, Physics 21, Mechanics and Heat, Stanford University (Fall 2006)
- Teaching assistant, Physics 24, Electricity and Optics Laboratory, Stanford University (Winter 2006)
- Teaching assistant, Physics 45, Light and Heat, Stanford University (Autumn 2005)
- Grader for the math department at UCSB (Spring 1999 – Spring 2001)
- Grader for the physics department at UCSB (Spring 1999)

Awards

- 2002: - Graduated with the Outstanding Senior Award and highest academic honors
- 2001: - Summer 2001 Research Internships in Science and Engineering award (RISE.)
- 2000: - CCS Summer Undergraduate Research Fellowships award (SURF.)
- 1999: - 1st place local winner at UCSB and 17th place nationwide on 1999 BAUPC.
- 1997: - Thai Scholarship for study in the field of Physics through Ph. D. in the U.S.
 - A Thai representative for 28th International Physics Olympiad (IPhO), Sudbury, Canada.

Talks and Presentations

8. **Exploring Quantum Matter Conference**, St. Andrews, Fife, UK: July 2007 (contributed)
Quick look of optimally-doped Hg1201

7. **APS March Meeting 2007, American Physical Society**, Denver, CO, USA: March 2007 (contributed)
The hierarchy of multiple many-body interaction scales in high-temperature superconductors

6. **The 5th National School on Photoemission, National Synchrotron Research Center**, Nakhonratchasima, Thailand: May 2006 (invited)
Two talks: *Angle-resolved photoemission spectroscopy (ARPES): a powerful tool for direct measurement of electronic structure* and *Study of high- T_c superconductivity with ARPES*

5. **APS March Meeting 2006, American Physical Society**, Baltimore, MD, USA: March 2006 (contributed)
Doping dependence of the coupling of electrons to bosonic modes in the single-layer high-temperature superconductor, $\text{Bi}_2\text{Sr}_2\text{CuO}_6$

4. **32nd Annual SSRL Users' Meeting, Stanford Synchrotron Radiation Laboratory**, Stanford, CA, USA: October 2005 (poster)
Doping dependence of the coupling of electrons to bosonic modes in the single-layer high-temperature superconductor, $\text{Bi}_2\text{Sr}_2\text{CuO}_6$

3. **The 4th National School on Photoemission, National Synchrotron Research Center**, Nakhonratchasima, Thailand: April 2005 (invited)
Research activities with photoemission at Stanford University

2. **APS March Meeting 2005, American Physical Society**, Los Angeles, CA, USA: March 2005 (contributed)
Bosonic Mode Coupling in the Single-Layer Bi-Cuprate, Bi_2O_7 (doping dependence)

1. **31st Annual SSRL Users' Meeting, Stanford Synchrotron Radiation Laboratory**, Stanford, CA, USA: October 2004 (poster)
Detailed Fermi surface maps of the single-layer Bi-cuprate $\text{Pb}_{x+y}\text{Bi}_{2-x}\text{Sr}_{2-y-z}\text{La}_z\text{CuO}_{6+\delta}$

Publications

12. W.L. Yang, J.D. Fabbri, T.M. Willey, J.R.I. Lee, J.E. Dahl, R.M.K. Carlson, P.R. Schreiner, A.A. Fokin, B.A. Tkachenko, N.A. Fokina, **W. Meevasana**, N. Mannella, K. Tanaka, X.J. Zhou, T. van Buuren, M.A. Kelly, Z. Hussain, N.A. Melosh, and Z.-X. Shen

Monochromatic Electron Photoemission from Diamondoid Monolayers

Science; 8 JUN 2007; v.316, p.1460

11. **W. Meevasana**, X. J. Zhou, S. Sahrakorpi, W. S. Lee, W. L. Yang, K. Tanaka, N. Mannella, T. Yoshida, D. H. Lu, Y. L. Chen, R. H. He, Hsin Lin, S. Komiya, Y. Ando, F. Zhou, W. X. Ti, J. W. Xiong, Z. X. Zhao, T. Sasagawa, T. Kakeshita, K. Fujita, S. Uchida, H. Eisaki, A. Fujimori, Z. Hussain, R. S. Markiewicz, A. Bansil, N. Nagaosa, J. Zaanen, T. P. Devereaux, and Z.-X. Shen

Hierarchy of multiple many-body interaction scales in high-temperature superconductors

Physical Review B; 9 May 2007; v. 75, p. 174506

10. N. Kikugawa, A. Rost, F. Baumberger, N.J.C. Ingle, M.A. Hossain, **W. Meevasana**, K.M. Shen, D.H. Lu, A. Damascelli, A.P. Mackenzie, Z. Hussain, and Z.-X. Shen

Ca₃Ru₂O₇: Electronic instability and extremely strong quasiparticle renormalisation

JOURNAL OF MAGNETISM AND MAGNETIC MATERIALS; MAR 2007; v.310, p.1027

9. K. M. Shen, F. Ronning, **W. Meevasana**, D. H. Lu, N. J. C. Ingle, F. Baumberger, W. S. Lee, L. L. Miller, Y. Kohsaka, M. Azuma, M. Takano, H. Takagi, and Z.-X. Shen

Angle-resolved photoemission studies of lattice polaron formation in the cuprate Ca₂CuO₂Cl₂

Physical Review B; 22 Feb. 2007; v. 75, p. 075115

8. **W. Meevasana**, T.P. Devereaux, N. Nagaosa, Z.-X. Shen, and J. Zaanen

Calculation of overdamped c-axis charge dynamics and the coupling to polar phonons in cuprate superconductors

Physical Review B; 30 Nov. 2006; v.74, p. 174524

7. F. Baumberger, N. J. C. Ingle, **W. Meevasana**, K. M. Shen, D. H. Lu, R. S. Perry, A. P. Mackenzie, Z. Hussain, D. J. Singh, and Z.-X. Shen

Fermi Surface and Quasiparticle Excitations of Sr₂RhO₄

Physical Review Letters; 20 June. 2006; v.96, p. 246402

6. **W. Meevasana**; N.J.C. Ingle; D.H. Lu; J.R. Shi; F. Baumberger; K.M. Shen; W.S. Lee; T. Cuk; H. Eisaki; T.P. Devereaux; N. Nagaosa; J. Zaanen; and Z.-X. Shen

Doping dependence of the coupling of electrons to bosonic modes in the single-layer high-temperature Bi₂Sr₂CuO₆ superconductor

Physical Review Letters; 21 Apr. 2006; v.96, p.157003

5. F. Baumberger; N. J. C. Ingle; N. Kikugawa; M. A. Hossain; **W. Meevasana**; R. S. Perry; K. M. Shen; D. H. Lu; A. Damascelli; A. Rost; A. P. Mackenzie; Z. Hussain; Z.-X. Shen

Nested Fermi Surface and Electronic Instability in Ca₃Ru₂O₇

Physical Review Letters; 17 Mar. 2006; v.96, no.10, p.107601

4. N.J.C. Ingle; K.M. Shen; F. Baumberger; **W. Meevasana**; D. H. Lu; Z.-X. Shen; A. Damascelli; S. Nakatsuji; Z. Q. Mao; Y. Maen; T. Kimura; Y. Tokura
Quantitative analysis of Sr_2RuO_4 angle-resolved photoemission spectra: Many-body interactions in a model Fermi liquid
Physical Review B; 11 Nov 2005; v.72, no.20, p.205114
3. K.M. Shen; F. Ronning; D.H. Lu; F. Baumberger; N.J.C. Ingle; W.S. Lee; **W. Meevasana**; Y. Kohsaka; M. Azuma; M. Takano; H. Takagi; Z.-X. Shen
Nodal Quasiparticles and Antinodal Charge Ordering in $Ca_{2-x}Na_xCuO_2Cl_2$
Science; 11 Feb. 2005; vol.307, no.5711, p.901
2. K.M. Shen; F. Ronning; D.H. Lu; W.S. Lee; N.J.C. Ingle; **W. Meevasana**; F. Baumberger; A. Damascelli; N.P. Armitage; L.L. Miller; Y. Kohsaka; M. Azuma; M. Takano; H. Takagi; Z.-X. Shen
Missing quasiparticles and the chemical potential puzzle in the doping evolution of the cuprate superconductors
Physical Review Letters; 31 Dec. 2004; v.93, no.26, p.267002
1. **W. Meevasana** ; G. Ahlers
Rayleigh-Benard convection in elliptic and stadium-shaped containers
Physical Review E; Oct 2002; v.66, no.4, p.046308