

Themis Mastoridis Curriculum Vitae

Affiliation

Assistant Professor
Physics Department
California Polytechnic State University, San Luis Obispo

Education

- August 2010 **Ph.D., Electrical Engineering**, Stanford University,
Stanford, CA.
Advisers: Prof. John Fox and Prof. Sami Tantawi,
Applied Physics Department, Stanford University.
Thesis: Radio Frequency Station - Beam Dynamics Interaction
in Circular Accelerators.
- June 2005 **M.S., Electrical Engineering**, Stanford University,
Stanford, CA.
- May 2003 **B.S., Physics, B.A., Mathematics** (Summa Cum Laude),
Brandeis University, Waltham, MA.
Adviser: Prof. Robert Meyer.
Thesis: Experiments on Dynamic Light Scattering.

Previous Positions

Toohig Fellow Postdoctoral Researcher
Stanford University
SLAC National Accelerator Laboratory

Electronics Engineer, BE-RF-FB
CERN, Geneva, Switzerland

Research Interests

Accelerator Physics, Beam Dynamics, Control Theory

Peer Reviewed Publications

1. P. BAUDRENGHIEN, T. MASTORIDIS, *Longitudinal emittance blowup in the large hadron collider*, Nuclear Instruments and Methods in Physics Research Section A: Accelerators, Spectrometers, Detectors and Associated Equipment, Volume 726, 21 October 2013.
2. S. BARON, T. MASTORIDIS, J. TROSKA, P. BAUDRENGHIEN, *Jitter impact on clock distribution in LHC experiments*, Journal of Instrumentation, Volume 7, December 2012.
3. T. MASTORIDES, C.H. RIVETTA, J.D. FOX, P. BAUDRENGHIEN, A. BUTTERWORTH, J. MOLENDIJK, *Radio Frequency Noise Effects on the CERN Large Hadron Collider Beam Diffusion*, Phys. Rev. ST Accel. Beams 14, 092802 (2011).
4. T. MASTORIDES, J.D. FOX, C.H. RIVETTA, D. VAN WINKLE, P. BAUDRENGHIEN, *RF system models for the CERN Large Hadron Collider with application to longitudinal dynamics*, Phys. Rev. ST Accel. Beams 13, 102801 (2010).
5. J.D. FOX, T. MASTORIDES, C. RIVETTA, D. VAN WINKLE, D. TEYTELMAN *Lessons Learned from PEP-II LLRF and Longitudinal Feedback*, Phys. Rev. ST Accel. Beams 13, 052802 (2010).
6. T. MASTORIDES, C. RIVETTA, J.D. FOX, D. VAN WINKLE, D. TEYTELMAN, *Analysis of Longitudinal Beam Dynamics Behavior and RF System Operative Limits at High Beam Currents in Storage Rings*, Phys. Rev. ST Accel. Beams 11, 062802 (2008) and SLAC-PUB-13287.
7. C. RIVETTA, T. MASTORIDES, J.D. FOX, D. TEYTELMAN, D. VAN WINKLE, *Modeling and Simulation of Longitudinal dynamics for Low Energy Ring-High Energy Ring at the Positron-Electron Project*, Phys. Rev. ST Accel. Beams 10, 022801 (2007).

Selected Recent Publications in Conference Proceedings and CERN Notes

1. T. MASTORIDIS, P. BAUDRENGHIEN, A. BUTTERWORTH, J. MOLENDIJK, J. TUCKMANTEL, *Cavity Voltage Phase Modulation MD blocks 3 and 4*, CERN-ATS-Note-2013-013 MD.
2. T. MASTORIDIS, P. BAUDRENGHIEN, O. BRUNNER, E. SHAPOSHNIKOVA, *LHC RF: 2012 Performance and Preparations for Post LS1 Operation*, Proceedings of the LHC Beam Operation workshop 2012, Evian, France, December 17-20, 2012.
3. P. BAUDRENGHIEN, T. MASTORIDIS, *Performances and Future Plans of the LHC RF*, Proceedings of the Advanced Beam Dynamics Workshop on High-Intensity and High-Brightness Hadron Beams, Beijing, China, September 17-21, 2012.
4. T. MASTORIDIS, P. BAUDRENGHIEN, J.C. MOLENDIJK, *LHC One-turn Delay Feedback Commissioning*, Proceedings of International Particle Accelerator Conference 2012, New Orleans, LO, USA, 20-25 May, 2012.
5. P. BAUDRENGHIEN, T. MASTORIDIS, *Proposal for an RF Roadmap Towards Ultimate Intensity in the LHC*, Proceedings of International Particle Accelerator Conference 2012, New Orleans, LO, USA, 20-25 May, 2012.
6. P. BAUDRENGHIEN, T. MASTORIDIS, *Running the RF at higher energy and intensity*, Proceedings of Chamonix 2012 Workshop on LHC Performance, Chamonix, France, February 6-10, 2012.
7. T. MASTORIDIS, P. BAUDRENGHIEN, *RF Observations during High Pile-up MD*, CERN-ATS-Note-2012-099 MD.
8. T. MASTORIDIS, P. BAUDRENGHIEN, A. BUTTERWORTH, J. MOLENDIJK, J. TUCKMANTEL, *Cavity Voltage Phase Modulation MD*, CERN-ATS-Note-2012-075 MD.
9. T. MASTORIDIS, P. BAUDRENGHIEN, M. JAUSSE, J. MOLENDIJK, J. TUCKMANTEL, *Batch By Batch Longitudinal Emittance Blowup MD*, CERN-ATS-Note-2012-050 MD.
10. J. ESTEBAN MULLER, *et. al.*, *Electron cloud observations through synchronous phase measurements*, CERN-ATS-Note-2012-036 PERF.
11. T. MASTORIDIS, P. BAUDRENGHIEN, J. MOLENDIJK, *The LHC One-Turn Feedback*, CERN-ATS-Note-2012-025 PERF.
12. T. MASTORIDIS, P. BAUDRENGHIEN, *RF Observations during 25 ns MD sessions in 2011*, CERN-ATS-Note-2012-024 MD.
13. T. MASTORIDIS, P. BAUDRENGHIEN, *RF Observations during High Single Bunch Intensity MD*, CERN-ATS-Note-2012-023 MD.

14. P. BAUDRENGHIEN, T. MASTORIDIS, *The LHC RF: 2011 and Beyond*, Proceedings of the LHC Beam Operation workshop 2011, Evian, France, December 12-14, 2011.
15. E.N. SHAPOSHNIKOVA, *et. al.*, *Loss of Landau Damping in the LHC*, Proceedings of International Particle Accelerator Conference 2011, San Sebastian, Spain, September 2011.
16. P. BAUDRENGHIEN, A.C. BUTTERWORTH, M. JAUSSE, T. MASTORIDIS, G. PAPOTTI, E.N. SHAPOSHNIKOVA, J. TUCKMANTEL, *Longitudinal Emittance Blow-up in the LHC*, Proceedings of International Particle Accelerator Conference 2011, San Sebastian, Spain, September 2011.
17. P. BAUDRENGHIEN, *et. al.*, *The LHC RF System - Experience with Beam Operation*, Proceedings of International Particle Accelerator Conference 2011, San Sebastian, Spain, September 2011.
18. T. MASTORIDES, J.D. FOX, C.H. RIVETTA, P. BAUDRENGHIEN, A. BUTTERWORTH, J. MOLENDIJK, *Studies of RF Noise Induced Bunch Lengthening at the LHC*, Proceedings of Particle Accelerator Conference 2011, New York, NY, March 2011.
19. C.H. RIVETTA *et. al.*, *Mathematical Models of Feedback Systems for Control of Intra-Bunch Instabilities Driven by E-Clouds and TMCI*, Proceedings of Particle Accelerator Conference 2011, New York, NY, March 2011.

Teaching Experience

- 2008 - 2010 **Teaching Assistant**, *Physics and Applied Physics Departments, Stanford University, Stanford, CA.*
 Various undergraduate and graduate level courses, including *Introduction to Laboratory Physics, Laboratory Electronics I and II, Intermediate Physics Laboratory I: Analog Electronics.*
- Winter 2009 - **Tutor**, *Science Bus, East Palo Alto, CA*
 Spring 2010 The Science Bus is an after-school science curriculum at Stanford University for 2nd through 5th grade students at the East Palo Alto Charter School (EPACS). The program is developed and taught by graduate and undergraduate students at Stanford University and is designed to encourage minority and underrepresented ethnic and social groups to participate in the physical sciences.
- Summer 2008 **Instructor**, *Stanford University Educational Program for*
 Summer 2009 *Gifted Youth, Stanford, CA.*
 Developed and taught three two-week, residential **Physical Science** (emphasis on classical mechanics) classes with a hands-on experimental approach. Developed experiments, lecture notes, problem sets, and instruction-aiding activities.
- 2005 - 2008 **Physics and Mathematics Instructor**, *FLEX College Prep, Cupertino, CA.*
 Tutored high school level Physics and Mathematics and instructed SAT courses in both disciplines. Developed and taught summer courses in Honors Physics and SAT II Mathematics and Physics.
- 2000 - 2003 **Lab/Research Assistant**, Brandeis University, Waltham, MA.
 Developed, constructed and improved apparatus and electronic instruments for the first year undergraduate lab. Developed further experiments, mainly in optics, for the graduate lab and assisted with the research of the faculty members in the field.
- 2000 - 2003 **Physics and Mathematics Tutor**, Brandeis University, Waltham, MA.
 Tutored groups and individuals in university mathematics and physics through the university's tutorial program.

Awards

- 2010 **Toohig Fellowship**, DOE-funded fellowship under the LHC Accelerator Research Program (LARP) focusing on LHC related accelerator science research and promoting the collaboration of DOE laboratories with CERN.
- 2003 **High Honors in Senior Research**, Brandeis University. Presented at the Eleventh Annual Stephan Berko Student Research Symposium.
- 1999 - 2003 **Wien Scholarship**, Brandeis University. Comprehensive four-year merit scholarship for international students who combine outstanding academic ability with superior accomplishments in leadership, service, and athletics.

Professional Associations

- American Physical Society (APS)
- Phi Beta Kappa Honor Society

Languages

- **Greek**, Native language.
- **Italian, French**, Beginner level.