

VITA

Joel W. Walker
Assistant Professor of Physics, Sam Houston State University
jwalker@shsu.edu (936) 294-4803 www.joelwalker.net

Education

Ph.D. in Theoretical Particle Physics, Texas A&M University, 2005
Thesis: "Aspects of Grand Unification and String Phenomenology"
Supervisor: Dimitri V. Nanopoulos, Distinguished Professor of Physics
B.S. in Physics, Harding University, 1997

Positions Held

2007-Present, Assistant Professor of Physics, Sam Houston State University
2005-2007, Visiting Assistant Professor of Physics, Sam Houston State University
1997-2005, Graduate Assistant, Texas A&M University Department of Physics

Research and Professional Accomplishments

Theory (1 PRD, 3 PLB, 2 NPB, 3 published elsewhere)

Grand unified models, particularly Flipped SU(5)
Models based on no-scale supergravity
String theoretic and D-brane model building

Phenomenology (2 PRD, 3 PLB, 2 NPB, 5 under review)

Simulation of Higgs and supersymmetric LHC signatures
Proton decay, dark matter, and rare process constraints

Experiment Service

Monitoring tools for CMS GRID Computing at the LHC
Guest member of CDF at the Fermilab Tevatron

Computing

GRID, high performance, and high throughput computing
Large scale programming and numerical analysis

Teaching

7 unique upper division and 9 unique lower division courses
Mentor for SPS and supervisor of student research
Authored web-based quiz delivery system

Grants and Funding

Research Enhancement Grant, Sam Houston State University, 2011-2012
Awarded private ten node computing cluster as research startup
Participant in Norman Hackerman Advanced Research Program grant (PI's David Toback and Guy Almes)
"Discovery of Dark Matter using High Performance Computing and LHC Data at Texas A&M"

Refereed Publications For 2011 (Full bibliography at http://arxiv.org/a/walker_j_1)

Li, Tianjun and Maxin, J.A. and Nanopoulos, D.V. and Walker, J.W., "The Ultra-High Jet Multiplicity Signal of Stringy No-Scale F-SU(5) at the $\sqrt{s} = 7$ TeV LHC" , *Physical Review*, D84, 076003, 2011 [[arXiv:1103.4160](http://arxiv.org/abs/1103.4160)]

Li, Tianjun and Maxin, J.A. and Nanopoulos, D.V. and Walker, J.W., "Blueprints of the No-Scale Multiverse at the LHC" , *Physical Review*, D84, 056016, 2011 [[arXiv:1101.2197](http://arxiv.org/abs/1101.2197)]

Li, Tianjun and Maxin, J.A. and Nanopoulos, D.V. and Walker, J.W., "Super No-Scale F-SU(5): A Dynamic Determination of $M_{1/2}$ and $\tan \beta$ " , *Physics Letters*, B703:469-474, 2011 [[arXiv:1010.4550](http://arxiv.org/abs/1010.4550)]

Li, Tianjun and Maxin, J.A. and Nanopoulos, D.V. and Walker, J.W., "The No-Scale Multiverse at the LHC" , *Journal of Physics: Conference Series*, 306, 2011 [[arXiv:1104.0231](http://arxiv.org/abs/1104.0231)]

Li, Tianjun and Maxin, J.A. and Nanopoulos, D.V. and Walker, J.W., "The Golden Strip of Correlated Top Quark, Gaugino, and Vectorlike Mass In No-Scale, No-Parameter F-SU(5)" , *Physics Letters*, B699:164-168, 2011 [[arXiv:1009.2981](http://arxiv.org/abs/1009.2981)]

Li, Tianjun and Maxin, J.A. and Nanopoulos, D.V. and Walker, J.W., "The Golden Point of No-Scale and No-Parameter F-SU(5)" , *Physical Review*, D83, 056015, 2011 [[arXiv:1007.5100](http://arxiv.org/abs/1007.5100)]

Li, Tianjun and Maxin, J.A. and Nanopoulos, D.V. and Walker, J.W., "Dark Matter, Proton Decay and Other Phenomenological Constraints in F-SU(5)" , *Nuclear Physics*, B848:314-331, 2011 [[arXiv:1003.4186](http://arxiv.org/abs/1003.4186)]

Li, Tianjun and Nanopoulos, D.V. and Walker, J.W., "Elements of F-ast Proton Decay" , *Nuclear Physics*, B846:43-99, 2011 [[arXiv:1003.2570](http://arxiv.org/abs/1003.2570)]

Articles Under Review

Li, Tianjun and Maxin, J.A. and Nanopoulos, D.V. and Walker, J.W., "The Unification of Dynamical Determination and Bare Minimal Phenomenological Constraints in No-Scale F-SU(5)" , (*PRD*) [[arXiv:1105.3988](http://arxiv.org/abs/1105.3988)]

Li, Tianjun and Maxin, J.A. and Nanopoulos, D.V. and Walker, J.W., "The Race for Supersymmetric Dark Matter at XENON100 and the LHC: Stringy Correlations from No-Scale F-SU(5)" , (*PRD*) [[arXiv:1106.1165](http://arxiv.org/abs/1106.1165)]

Li, Tianjun and Maxin, J.A. and Nanopoulos, D.V. and Walker, J.W., "A Two-Tiered Correlation of Dark Matter with Missing Transverse Energy: Reconstructing the Lightest Supersymmetric Particle Mass at the LHC" , (*JHEP*) [[arXiv:1107.2375](http://arxiv.org/abs/1107.2375)]

Li, Tianjun and Maxin, J.A. and Nanopoulos, D.V. and Walker, J.W., "Has SUSY Gone Undetected in 9-jet Events? A Ten-Fold Enhancement in the LHC Signal Efficiency" , (*PRD*) [[arXiv:1108.5169](http://arxiv.org/abs/1108.5169)]

Li, Tianjun and Maxin, J.A. and Nanopoulos, D.V. and Walker, J.W., "A Natural Prediction for the Higgs Boson Mass: $120^{+3.5}_{-1}$ GeV" , (*PLB*) [[arXiv:1109.2110](http://arxiv.org/abs/1109.2110)]

Selected Presentations

"Monitoring Your CMS Tier 3 Site", CMS Tier 3 Workshop, Texas Tech University, Summer 2011

"Super No-Scale F-SU(5): Resolving the Hierarchy Problem by Dynamic Determination of $M_{1/2}$ and $\tan \beta$ " , Seminar, Arizona State University Department of Physics, Fall 2010

"The Golden Strip of Correlated Top Quark, Gaugino, and Vectorlike Mass In No-Scale, No-Parameter F-SU(5)" , Colloquium, Baylor University Department of Physics, Fall 2010

"F-ast Proton Decay" , PHENO 2010 Symposium, University of Wisconsin-Madison, Spring 2010