**JOHN N. MATTHEWS**

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**EDUCATION:**

Rutgers University Particle Physics Ph.D. 1995

University of Wisconsin-Madison Physics M.S. 1987

University of Chicago Physics, Math, Econ. A.B. 1985

**PROFESSIONAL EXPERIENCE:**

University of Utah, Department of Physics and Astronomy Research Professor (2011~)

Cosmic Ray Physics Program Manager (2001~)

Research Assoc. Professor (2003-2011)

Project Manager (1998~)

Research Asst. Professor (1998-2003)

Research Associate (1995-98)

Rutgers University, Department of Physics Graduate Research Asst. (1990-95)

Graduate Teaching Asst. (1988-89)

University of Wisconsin-Madison, Dept of Physics Supervisor, Electr. Constr. (1987-88)

Research Assistant (1985-87)

University of Chicago, Department of Physics Undergraduate Res. Asst. (1983-85)

**RESEACH ACTIVITES:**

* 1997 ~ Telescope Array (study of ultra high energy cosmic rays and neutrinos)
* 2016~ sFLASH (FLuorescence in Air SHowers) - calibration of the air fluorescence technique
* 2012~ Extreme Universe Space Observatory (EUSO)
* 2001-2007 FLASH (FLuorescence in Air SHowers) - calibration of the air fluorescence technique
* 1995-2007 HiRes and OWL (study of ultra high energy cosmic rays and neutrinos)
* 1990 ~ 95 FNAL-E773/E799/KTeV (study of direct CP violation in kaon decays and rare kaon decays)

**SELECTED PUBLICATIONS:**

* First Observation of the (Greisen-Zatsepin-Kuzmin) GZK Suppression. R.U. Abbasi, *et al.*  (HiRes collaboration), Phys. Rev. Lett. **100** 101101 (2008)
* Indications of a Proton Dominated Cosmic Ray Composition Above 1.6 EeV. R.U. Abbasi, *et al.* (HiRes Collaboration), Phys. Rev. Lett. **104** 161101 (2010)
* Indications of Intermediate-Scale Anisotropy of Cosmic Rays with Energy Greater Than 57 EeV in the Northern Sky Measured with the Surface Detector of the Telescope Array Experiment. R.U. Abbasi, *et al*., (Telescope Array Collaboration) Ap.J. Letters, 790:**L21**, (2014). arXiv:1404.5890.
* Dethinning Extensive Air Shower Simulations. B.T. Stokes, R. Cady, D. Ivanov, J.N. Matthews, G.B. Thomson Astropart. Phys. **35**, 759 (2012).
* A Multi-Component measurement of the Cosmic Ray Spectrum Between 1017 and 1018 eV. T. AbuZayyad, *et al.* Phys.Rev.Lett.**84**: 4276, 2000
* Using Fractal Dimensionality in the Search for Source Models of Ultra-high Energy Cosmic Rays. B.T. Stokes, C.C.H. Jui, and J.N. Matthews, Astropart. Phys. **21**, 95 (2004)
* Search for Global Dipole Enhancements in the HiRes-1 Monocular Data above 1018.5 eV. R. Abbasi, *et al.* (HiRes Collaboration), Astropart. Phys. **21**, 111 (2004)
* Measurement of the Flux of Ultrahigh Energy Cosmic Rays from Monocular Observations by the High Resolution Fly's Eye Experiment. R. Abbasi, *et al.* (HiRes Collaboration), Phys. Rev. Lett. **92**, 151101 (2004)
* Measurement of Pressure Dependent Fluorescence Yield of Air: Calibration factor for UHECR

Detectors. J.W. Belz *et al*. (FLASH Collaboration), Astropart. Phys. **25** (2006) 129.

* New Measurement of the CP Violation Parameter +-, J.N. Matthews, *et al.,* Phys.Rev.Lett.**75**: 2803, 1995
* CPT Tests in the Neutral Kaon System. B. Schwingenheuer, *et al.*, Phys.Rev.Lett.**74**: 4376, 1995
* polarization of and  Produced by 800-GeV Protons. E. Ramberg, *et al.* Phys.Lett.B.**338**: 403, 199

**SYNERGISTIC ACTIVITIES:**

* Project Manager - HiRes, FLASH, Telescope Array
* ASPIRE Educational Outreach
* Local Organizing Committee: 26th ICRC (Salt Lake City, Utah, 1999)
* Local Organizing Committee: Physics at the End of the Galactic Energy Spectrum - (Aspen, Colorado, 2005 & 2007)
* Local Organizing Committee: UHECR-2014 (Springdale, Utah, 2014)
* Editor Proceedings UHECR-2014
* Coordinator for interaction with: US Army/Dugway Proving Ground, US Air Force, Federal Aviation Authority (FAA), US Bureau of Land Management (BLM), US Department of Commerce, State of Utah, State Institutional Trust Land Authority (SITLA)

**COLLABORATORS:**

* Telescope Array: P. Sokolsky, C.C.H. Jui, R.W. Springer, G. Thomson, D. Bergman, J.Belz (Utah), M. Fukushima, H. Sagawa (ICRR, Tokyo), S. Ogio, Y. Tsunesada (Osaka City Univ.) I. Tkachev, G. Rubstov, O. Kalashev, S. Troitsky (Institute for Nuclear Research. Russian Academy of Science) P. Tinyakov (Université Libre de Bruxelles) I. Park (Sung Kyun Kwan Univeristy)
* sFLASH: P.Sokolsky, C.C.H.Jui G.B.Thomson, J.Belz (Utah), M. Fukushima (ICRR, U.Tokyo), C. Fields (SLAC), B.K. Shin (Osaka CU), P. Chen (Taiwan NU), K.Belov (UCLA/JPL)
* EUSO: A. Olinto (Chicago), T. Ebisuzaki, M. Casolino, Y.Takizawa (RIKEN), J. Adams (Alabama-Huntsville), M. Fukushima, H. Sagawa (ICRR, Tokyo), S. Ogio, Y. Tsunesada (Osaka City) T. Yamamoto, F. Kajino (Konan), M. Chikawa (Kinki), L. Wiencke (Colorado Mines), M. Bertaina (INFN-Torino)
* FLASH: P. Sokolsky, C.C.H. Jui (Utah), G. Thomson (Rutgers), P. Chen, C. Fields (SLAC)
* HiRes: P. Sokolsky (Utah), E. C. Loh, C.C.H. Jui (Utah), G. Thomson (Rutgers), B. Dawson (Adelaide), J. Belz (Montana St.) M. Sasaki (Tokyo)
* E773/E799/KTeV: B. Winstein, Y. Wah (Chicago), T. Yamanaka (Osaka), G. Thomson (Rutgers), R. Tschirhart, E. Ramberg (Fermilab),

# GRADUATE AND POSTDOCTORAL ADVISORS:

Gordon Thomson (Rutgers), Pierre Sokolsky (Utah), Eugene Loh (Utah)

**STUDENTS SUPERVISED:**

R. Riehle, B.F Jones, S.A. Moore, A.N. Moosman, A. Everett, R.U. Abassi, M. Dalton, M.M. Maestas, N. Manago, D. Rodriquez, M.G. Allen, C. Ebeling, J. Kim, G. Furlich