Krishna Subramanian Kumar

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RESEARCH INTERESTS

Experimental Nuclear and Particle Physics:

- Low energy searches for physics beyond the Standard model
- QCD Structure of the nucleon and other tests of low energy QCD

EDUCATION

Indian Institute of Technology, Bombay	Physics	M.Sc. (1984)
Syracuse University, Syracuse, NY	Physics	Ph.D. (1990)

EMPLOYMENT

2004- ***Professor of Physics****, University of Massachusetts, Amherst*
1999-2004 ***Associate Professor of Physics****, University of Massachusetts.*
1993-1999 ***Assistant Professor of Physics****, Princeton University*
1990-1993 **Research Associate of Physics**, Harvard University

PROFESSIONAL AFFILIATIONS

- American Physical Society
- Massachusetts Teachers Association
- Massachusetts Society of Professors

PROFESSIONAL SERVICE, HONORS AND AWARDS

- Fellow, American Physical Society, 2005
- Member, Nuclear Science Advisory Committee, 2001-2004
- Member, Executive Committee, APS Division of Nuclear Physics, 2007-8
- 1995 Outstanding Junior Investigator Award, awarded by the US Department of Energy, Division of High Energy Physics
- 1990 Peter T. Demos Award, Achievement in Graduate Student Research, awarded by the MIT-Bates Linear Accelerator Users Group
- 1990 Doctoral Prize, Graduate School at Syracuse University

SELECTED PUBLICATIONS

1. "Precision Measurements of the Nuclear Strange Form Factors at $Q^2 \sim 0.1$ GeV^2", HAPPEX Collaboration, Phys.Rev.Lett. **98**:032301 (2007).
2. "Parity-Violating Electron Scattering from ^{4}He and the Strange Electric Form Factor of the Nucleon", HAPPEX Collaboration, K.A. Aniol et. al, nucl-ex/0506010, Phys.Rev.Lett. **96**:022003 (2006).
3. "Constraints on the Nucleon Strange Form Factors at $Q^2 \sim 0.1$ GeV^2", HAPPEX Collab., nucl-ex/0506011, Phys.Lett.**B635**, 275 (2006).
4. "A Precision Measurement of the Weak Mixing Angle in Møller Scattering", E158 Collaboration, P.L. Anthony et. al, hep-ex/0504049, Phy.Rev.Lett. **95**:081601 (2005).
5. "Flux Profile Scanners for Scattered High Energy Electrons", R.S. Hicks et al,

Nucl.Instrum.Meth. **A553**:470-482 (2005).

6. "The SLAC's Polarized Electron Source and the Minimization of Electron Beam Helicity Correlations for the SLAC E158 Experiment", T.B. Humensky et.al, Nucl.Instrum.Meth. **A521**, 261-298 (2004).
7. "Observation of Parity Nonconservation in Møller Scattering", E158 Collaboration, P.L.Anthony et.al., Phys.Rev.Lett. **92**, 181602 (2004).
8. "Parity Violating Electroweak Asymmetry in Polarized e-p Scattering", HAPPEX Collaboration, K.A.Aniol et. al, Phys.Rev.**C69**, 065501 (2004).
9. "Strange Quarks and Parity Violation", K.S.Kumar and P.A.Souder, Prog.Nucl.Part.Phys. **45**, S333 (2000).
10. "The Future of Fixed Target Physics: Snowmass E5 Working Group Summary", K.S.Kumar, R.Ray, P.E.Reimer and M.Strovink, eConf **C010630**, E5001 (2001).
11. "Precision Parity Violating Neutral Current Measurements", K.S.Kumar, R.S.Holmes, E.W.Hughes and P.A.Souder, Mod.Phys.Lett. **A10**, 2979 (1995).
12. "Precision Determination of the Neutron Spin Structure Function g_1^n", K. Abe et. al, Phys.Rev.Lett. **79**, 26 (1997).
13. "A Combined Polarized Target/Ionization Chamber for Measuring the Spin Dependence of Nuclear Muon Capture in Laser Polarized Helium-3", P.Bogorad et.al, Nucl. Instrum.Meth. **A402,** 311 (1998).
14. "Measurement of Tau Polarization in Z^0 Decays", L3 Collaboration, O.Adriani et al, Phys. Lett. **294B**, (1992) 466.

RECENT CONFERENCES

1. "Parity-Violating Deep Inelastic Scattering with the Jefferson Lab 12 GeV Upgrade", talk at DIS2007, Munich, Germany, April 2007.
2. "Conclusions and Perspectives", summary talk at PAVI06, Milos, Greece, May 2006.
3. "Electroweak and Beyond the Standard Model Physics", Co-convener of parallel session at CIPANP2006, Peurto Rico, June 2006.
4. "Probing Subatomic Matter with Polarized Electrons: MeV to TeV Physics", Plenary Talk at the APS April Meeting, Tampa, FL, 2005
5. "Electroweak Physics", Lecturer at the HUGS Summer School, Jefferson Laboratory, Newport News, VA, June 2005.
6. "Spin Physics", Co-convener of parallel session at DIS2005, Madison, WI, USA, April 2005
7. "Light Quarks and Leptons", Co-convener of parallel session at CIPANP2003, New York City, USA, May 2003.
8. "Fixed Target Physics", co-organizer of parallel session at APS/DPF/DPB Summer Study on the Future of Particle Physics, Snowmass, June 2001.

COLLABORATIONS AND OTHER AFFILIATIONS

- **PRINCIPAL SPOKESPERSON:** SLAC E158 Collaboration
- **CO-SPOKESPERSON:** Jefferson Laboratory HAPPEX Collaboration
- **COLLABORATION MEMBER:** EXO, SLAC E154, L3 (1990-1995) at CERN
- **THESIS ADVISING AND POSTGRADUATE-SCHOLAR SPONSOR:** Students: G.W. Miller (Virginia), David Relyea (Caltech), Lisa Kaufman (UMaryland), Luis Mercado (Umass). Research Associates: Carlos Arroyo, Kent Paschke.