TATJANA MILETIC

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EDUCATION

Ph.D., Drexel University, Philadelphia, PA
Department of Physics, 2009
M.S., Drexel University, Philadelphia, PA
Department of Physics, 2003
B.S., University of Belgrade, Belgrade, Serbia
Department of Physics, 2000

TEACHING EXPERIENCE

Visiting Professor, September 2009 - present
Department of Physics and Astronomy, Rowan University, Glassboro, NJ

Teaching Assistant, 2001-2009
Department of Physics, Drexel University, Philadelphia, PA

- Taught various physics courses, from introductory, fundamental physics classes like Physics 101 to advanced courses like Modern Physics, Advanced Physics Lab and Instrumentation Lab.
- Through these courses gained extensive experience and knowledge in teaching methods, laboratory equipment and electronic set up used in these labs that span all areas of physics, from introductory classical physics to contemporary physics.
- Responsibilities included teaching recitation and lab sections that had 10-25 students, grading homework assignments, reports, proctoring and grading exams.
- I occasionally served as a replacement professor for courses like Physics 101 for groups of about 100 students.

RESEARCH EXPERIENCE

Research Assistant, 06/2002 - 08/2009
Department of Physics, Drexel University, Philadelphia
Advisor: Charles Lane

I have gained my research experience by working on KamLAND (Kamioka Liquid scintillator Anti-Neutrino Detector) experiment. I have been member of KamLAND collaboration from May 2002. KamLAND is an international, mainly Japanese-American effort that involves over 100 scientists. It is a 1Kt liquid scintillator detector, built to study neutrino oscillation phenomenon, one of the burning questions of elementary particle physics in the last decade.

- The main body of my work focuses on the 'Search for Signature of Neutron Disappearance in the KamLAND Detector' which is also the topic of my Ph.D. dissertation. In this analysis I study KamLAND data in the search of neutron decay into three neutrinos. Analysis involves manipulating and mining large data sets in the search of the candidates of these rare events in well over a billion triggered events..
- Collaborated in publications on neutrino oscillations.
- Developed software in order to estimate detection efficiency such as writing Neutron Monte Carlo simulation in order to estimate the distance energetic neutrons travel before thermalizing and justify the analysis cuts.
- Participated in the operation and maintenance of the KamLAND detector.
- Wrote software to analyze MACRO - KamLAND backup front-end electronic data.
- Utilized the software for operating MACRO electronic and checked compatibility and absence of conflict with the primary front-end electronics system by acquiring and comparing Nsums (Photomultiplier tubes - PMTs hit information) from all PMT channels.
- Analyzed MACRO data in order to determine low energy background signal in KamLAND Detector.
- Tested operation of MACRO electronic equipment on site.

COMPUTER SKILLS

Operating Systems: Linux, Microsoft Windows
Software: C++,C, ROOT, MatLab, LaTeX

LANGUAGES

- Serbian (native)
- German and Italian (basics)

POSTERS AND PRESENTATIONS

- 2006 Drexel Research Day 'Search for Signature of Neutron Disappearance in the KamLAND Detector'
- Neutrino 2006, Santa Fe, USA, Search for the Invisible Decay of Neutrons with KamLAND'

SUMMER SCHOOL

- 'Second International Summer Student School of Neutrino Physics in Memory of Bruno Pontekorvo', organized by Joint Institute for Nuclear research(JINR), Krimea, Ukraine, 2003

RESEARCH INTERESTS

- Neutrino physics: measurement of neutrino oscillation parameters, neutrinoless double beta decays, absolute neutrino mass measurements, solar neutrino physics
- Astrophysics: neutrino telescopes, cosmic ray and γ-ray astronomy
- Physics beyond Standard Model, nucleon decay and rare decays.

ADDITIONAL INFORMATION

- Active member of Drexel Sigma Xi Research Society chapter since summer 2008. Served as an officer in the past.

PUBLICATIONS IN REFEREED JOURNALS

- KamLAND Collaboration,
  The KamLAND Full-Volume Calibration System, *JINST 4:P04017 (2009)*
- KamLAND Collaboration,
  Precision Measurement of Neutrino Oscillation Parameters with KamLAND, *Phys. Rev. Lett. 100, 221803 (2008)*
- KamLAND Collaboration,
  Search for the Invisible Decay of Neutrons with KamLAND, *Phys. Rev. Lett. 96, 101802 (2006)*
- KamLAND Collaboration,
  Experimental Investigation of Geologically Produced Anti-neutrinos with KamLAND, *Nature 436, 499-503, (2005)*
- KamLAND Collaboration,
  Measurement of Neutrino Oscillation with KamLAND: Evidence of Spectral Distortion, *Phys.Rev.Lett. 94, 081801 (2005)*
- KamLAND Collaboration,
  A High Sensitivity Search for $\bar{\nu}_e$'s from the Sun and Other Sources at KamLAND, *Phys.Rev.Lett. 92, 071301 (2004)*
- KamLAND Collaboration,
  First Results from KamLAND: Evidence for Reactor Antineutrino Disappearance, *Phys. Rev. Lett. 90, 021802 (2003)*

REFERENCES

- Prof. Charles Lane (PhD advisor), Drexel University

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- Prof. Jelena Maricic (Collaborator), Drexel University

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- Prof. Tech Kah Lim, Drexel University

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