

# Kazumi Kashiyama

## Curriculum Vitae – October 2014

Institution: Department of Astronomy; Department of Physics;  
Theoretical Astrophysics Center; UC Berkeley  
Address: 402G, Campbell Hall, UC Berkeley, Berkeley, CA 94720  
Date of Birth: November 20, 1983  
Sex: Male  
Citizenship: Japan  
Tel: +1-510-642-5275  
E-mail: [kashiyama@berkeley.edu](mailto:kashiyama@berkeley.edu)  
URL: <http://www.personal.psu.edu/kzk15/>

### ***Field of Research:***

Theoretical astrophysics generally, with an emphasis on physics of compact objects, and related high-energy phenomena including gamma-ray bursts and supernovae.

### ***Position:***

Sep 2014 – present: Einstein Fellow  
Department of Astronomy, UC Berkeley  
Host Researcher: Prof. Eliot Quataert

Apr 2012 – Sep 2014: JSPS (Japan Society for the Promotion of Science) research fellow,  
Department of Astronomy & Astrophysics, Penn State University  
Host Researcher: Prof. Peter Meszaros

Apr 2009 – Mar 2012: Teaching and Research Assistant,  
Department of Physics, Kyoto University

### ***Education:***

2012: Kyoto University Ph. D., Physics  
Thesis subject: “Origins of High-Energy Cosmic-Ray Electrons and Positrons”  
Adviser: Prof. Takashi Nakamura

2009: Kyoto University: M. Sc., Physics  
Thesis subject: “Quantum Back Reactions to Asymptotically AdS Black Holes”  
Adviser: Prof. Takahiro Tanaka

2007: Kyoto University: B. Sc., Physics

### ***Society Membership:***

2011 – present: Collaboration Member of KAGRA

2009 – present: The Physical Society of Japan

### ***Professional Service:***

Referee for The Astrophysical Journal, The Astrophysical Journal Letter, Publications of Astronomical Society of Japan.

### ***Teaching Assistantship:***

2009 – 2012: “Quantum Mechanics” (Prof. Kunihiro Teiji)

### ***Publication list:***

#### *Refereed journal papers*

1. Takashi Nakamura, Kazumi Kashiyama, Daisuke Nakauchi, Yudai Suwa, Takanori Sakamoto, Nobuyuki Kawai, “Soft X-ray Extended Emissions of Short Gamma-Ray Bursts as Electromagnetic Counterparts of Compact Binary Mergers; Possible Origin and Detectability”, *The Astrophysical Journal*, 796, 13
2. Kazumi Kashiyama, Peter Meszaros, “Galaxy Mergers as a Source of Cosmic Rays, Neutrinos, and Gamma rays”, *The Astrophysical Journal*, 790, L14
3. Daisuke Nakauchi, Kazumi Kashiyama, Yudai Suwa, Takashi Nakamura, “Bleu-supergiant model for ultra-long gamma-ray burst with super-luminous-supernova-like bump”, *The Astrophysical Journal*, 778, 68
4. Kazumi Kashiyama, Kunihiro Ioka, Peter Meszaros, "Cosmological Fast Radio Bursts from Binary White Dwarf Mergers", 2013, *The Astrophysical Journal*, 776, L39
5. Kohta Murase, Kazumi Kashiyama, Peter Meszaros, "Subphotospheric Neutrinos from Gamma-Ray Bursts: The Role of Neutrons", 2013, *Physical Review Letters*, 111, 131102
6. Kazumi Kashiyama, Kohta Murase, Peter Meszaros, “Neutron-Proton-Converter Acceleration Mechanism at Sub-photospheres of Relativistic Outflows", 2013, *Physical Review Letters*, 111, 131103
7. Derek Fox, Kazumi Kashiyama, Peter Meszaros, "Sub-PeV Neutrinos from TeV Unidentified Sources in the Galaxy", 2013, *The Astrophysical Journal*, 774, 47
8. Shan Gao, Kazumi Kashiyama, Peter Meszaros, "On the neutrino non-detection of GRB 130427A", 2013, *The Astrophysical Journal*, 772, L4
9. Kazumi Kashiyama, Daisuke Nakauchi, Yudai Suwa, Hidenobu Yajima, Takashi Nakamura, "Luminous Supernova-like UV/Optical/Infrared Transients Associated with Ultra-Long Gamma-Ray Bursts from Metal-Poor Blue Supergiants", 2013, *The Astrophysical Journal*, 770, 8

10. Kazumi Kashiyama, Kohta Murase, Shunsaku Horiuchi, Shan Gao, Peter Meszaros, "High-energy neutrino and gamma-ray transients from trans-relativistic supernova shock breakouts", 2013, *The Astrophysical Journal*, 769, L6
11. Daisuke Nakauchi, Yudai Suwa, Norihiro Sakamoto, Kazumi Kashiyama, Takashi Nakamura, "Long Duration X-Ray Flash and X-Ray Rich Gamma Ray Burst from Low Mass Population III Star", 2012, *The Astrophysical Journal*, 759, 128
12. Kazumi Kashiyama, Naoki Seto, "Enhanced exploration for primordial black holes using pulsar timing arrays", 2012, *Monthly Notices of the Royal Astronomical Society*, 426, 2
13. Kazumi Kashiyama, Kunihito Ioka, "Magnetar Asteroseismology with Long-Term Gravitational Waves", 2011, *Physical Review D (R)*, 83, 081302
14. Norita Kawanaka, Kunihito Ioka, Ohira Yutaka, Kazumi Kashiyama, "TeV Electron Spectrum for Probing Cosmic-Ray Escape from a Supernova Remnant", 2011, *The Astrophysical Journal*, 729, 93
15. Kazumi Kashiyama, Kunihito Ioka, Norita Kawanaka, "White Dwarf Pulsars as Possible Cosmic Ray Electron-Positron Factories", 2011, *Physical Review D*, 83, 023002
16. Kazumi Kashiyama, Norihiro Tanahashi, Antonino Flachi, Takahiro Tanaka, "Quantum back reaction to asymptotically AdS black holes", 2010, *Journal of High Energy Physics*, 1001, 099

## **Talks:**

### Invited talks

1. "Neutrino Tomography of GRB jet", Ioffe GRB Workshop 2014, St. Petersburg, Russia, September, 2014
2. "Possible galactic sources of high energy neutrinos", Cosmic Messages in Ghostly Bottles, Columbus, USA, February, 2014
3. "Multi-messenger astrophysics in the AMON era", AMON workshop, State College, USA, September, 2013
4. "White dwarf pulsars as cosmic-ray electron-positron factories", 13<sup>th</sup> Marcel Grossmann meeting, Stockholm, Sweden, July, 2012

### Contributed talks

1. "Unveiling Fast-Rotating Proto-Neutron-Star Formation with Multi-Messenger Signals", JSI Workshop 2014 Multimessenger Astronomy in the Era of PeV neutrinos, Annapolis, USA, December, 2014
2. "Neutron-Proton-Converter Acceleration at Sub-Photospheres of Relativistic Outflows", TeVPA2013, Irvine, USA, August, 2013
3. "Off-axis counterpart of short gamma-ray bursts tagged by gravitational waves", Gamma-ray bursts in the era of rapid follow-up, Liverpool, UK, June, 2012

4. “Magnetar Asteroseismology with long-term gravitational waves”, GCOE symposium Emerging Frontier of Physics Kyoto Japan, February, 2011
5. “Magnetar Asteroseismology with long-term gravitational waves” Physics of Neutron Stars -2011, St.Petersburg, Russia, July 2011
6. “White dwarf pulsars as possible electron-positron factories.”, COSMO Cospa 2010, Tokyo, Japan, September 2010
7. “White dwarf pulsars as possible electron-positron factories.”, JGRG20, Kyoto, Japan, September 2010
8. “White Dwarf Pulsars as Electron-Positron Factories.”, Physics of Accreting Compact binaries, Kyoto, Japan, July 2010
9. “White Dwarf Model for High Energy Electron-Positron Emission”, Deciphering the Ancient Universe with Gamma-Ray-Bursts, Kyoto, Japan, April 2010
10. “Revisit the Importance of High  $z$  lensed GRB Detection”, Deciphering the Ancient Universe with Gamma-Ray-Bursts, Kyoto, Japan, April 2010
11. “White Dwarf Model for high energy electron-positron emission”, GCOE symposium Symmetry Breaking and Quantum Phenomena, Kyoto, Japan, February 2010
12. “Quantum Back Reaction to asymptotically AdS Black Holes.”, The 19<sup>th</sup> Workshop on General Relativity and Gravitation in Japan, Tokyo, Japan, December 2009
13. “Quantum Back-reaction on Black Hole Space-time with Negative Cosmological Constant”, 12<sup>th</sup> Marcel Grossman Meeting, Paris, France, July 2009

### Seminars

1. “Cosmological(?) Fast Radio Bursts”, Princeton University, Princeton, USA, May, 2014
2. “Cosmological Fast Radio Bursts from Binary White Dwarf Mergers”, Institute of Advanced Study, Princeton, USA, September, 2013
3. “Neutron-Proton-Converter Acceleration at Sub-Photospheres of Relativistic Outflows”, Columbia University, New York, USA, June 2013
4. “High energy neutrino and gamma-ray transients from trans-relativistic supernova shock breakouts”, Nagoya University, Japan, January 2013
5. “Magnetar giant flare and its multi-messenger counterparts”, Swift MOC, State College, USA, October 2012