

INT Program INT 15-2a

Neutrino Astrophysics and Fundamental Properties

June 1 - June 26, 2015

*ALL TALKS WILL BE HELD IN THE SEMINAR ROOM, C421, &
MODERATED DISCUSSIONS HELD IN THE INTERACTION SPACE, C423*

Monday, June 1, 2015

3:30 PM Wick Haxton, UC Berkeley
Moderated Discussion

Tuesday, June 2, 2015

10:30 AM Georg Raffelt, Max Planck Institute for Physics (MPP)
"Supernova neutrinos and their flavor evolution"
11:00 AM Follow-up Discussion
11:15 AM Gary Steigman, Ohio State University
"Constraints On Dark Matter Thermal Relics. Light WIMPs And Equivalent (Sterile) Neutrinos.
BBN And CMB Constrain Sterile Neutrinos"
11:45 AM Follow-up Discussion

3:30 PM Bruce R. Barrett, University of Arizona
Moderated Discussion

Wednesday, June 3, 2015

10:30 AM Kai Zuber, TU Dresden
"Double-beta decay experiments"
11:00 AM Follow-up Discussion
11:15 AM Kelly Patton, Arizona State University
"Presupernova Neutrino Spectra"
11:45 AM Follow-up Discussion

3:30 PM Irina Mocioiu, Pennsylvania State University
Moderated Discussion

Thursday, June 4, 2015

3:30 PM Georg Raffelt, Max Planck Institute for Physics (MPP)
Moderated Discussion

Friday, June 5, 2015

10:30 AM Atri Bhattacharya, University of Arizona
"Investigating the origins of IceCube neutrino events"
11:00 AM Follow-up Discussion
11:15 AM Irina Mocioiu, Pennsylvania State University
"Looking for new physics with neutrinos"
11:45 AM Follow-up Discussion

3:30 PM Kai Zuber, TU Dresden
Moderated Discussion

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Monday, June 8, 2015

- 10:30 A Enrico Borriello, Arizona State University
"Probing Lorentz Invariance Violation with high-energy astrophysical neutrinos"
- 11:00 A Follow-up Discussion
- 11:15 A Wick Haxton, UC Berkeley
"Neutrinos and solar metallicity"
- 11:45 A Follow-up Discussion
- 3:30 PM Yong-Zhong Qian, University of Minnesota
Moderated Discussion

Tuesday, June 9, 2015

- 3:30 PM Steen Hannestad, University of Aarhus
Moderated Discussion

Wednesday, June 10, 2015

- 10:30 A Bruce R. Barrett, University of Arizona
"Deriving the Nuclear Shell Model Microscopically"
- 11:00 A Follow-up Discussion
- 11:15 A Hiroshi Nunokawa, Pontificia Univ Catolica do Rio
"Constraints on neutrino decay with medium baseline reactor neutrino oscillation experiments"
- 11:45 A Follow-up Discussion
- 3:30 PM Baha Balantekin, Univ. of Wisconsin-Madison
Moderated Discussion

Thursday, June 11, 2015

- 3:30 PM Kevork Abazajian, University of California, Irvine
Moderated Discussion

Friday, June 12, 2015

- 10:30 A Daavid Vaananen, North Carolina State University
"Neutrino oscillations in supernovae and compact object mergers: effects and implications on nucleosynthesis and observable signatures"
- 11:00 A Follow-up Discussion
- 11:15 A Cecilia Lunardini, Arizona State University
"Neutrinos and gamma rays from the Fermi Bubbles"
- 11:45 A Follow-up Discussion
- 3:30 PM Thomas J. Weiler, Vanderbilt University
Moderated Discussion

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ALL TALKS WILL BE HELD IN C-520

Monday, June 15, 2015

- 8:00 AM Registration in C411
9:15 AM Baha Balantekin, U. Wisconsin-Madison
"Collective Neutrino Oscillations"
9:45 AM Follow-up Discussion
10:00 A Coffee break
10:20 A Yong-Zhong Qian, University of Minnesota
"Effects of eV-Scale Sterile Neutrinos on Supernova Explosion and Nucleosynthesis"
10:50 A Follow-up Discussion
11:05 A Huaiyu Duan, University of New Mexico
"Spontaneous symmetry breaking in collective neutrino oscillations"
11:35 A Follow-up Discussion
2:00 PM Matt Kistler, Stanford University
TBD
2:30 PM Follow-up Discussion
2:45 PM Danny Marfatia, University of Hawaii
"Glashow Resonometer"
3:15 PM Follow-up Discussion
3:30 PM Coffee/refreshments

Tuesday, June 16, 2015

- 9:15 AM Bronson Messer, University of Tennessee
TBD
9:45 AM Follow-up Discussion
10:00 A Coffee break
10:20 A Evan O'Connor, N. Carolina State University
"Explosions and Neutrino Signals"
10:50 A Follow-up Discussion
11:05 A Jim Kneller, NC State University
"Stimulated Transitions and Self Interactions"
11:35 A Follow-up Discussion
2:00 PM Thomas Weiler, Vanderbilt University
"Icecube Neutrinos, Significance of No Events above 3 PeV?"
2:30 PM Follow up discussion
2:45 PM Benjamin Safdi, MIT
"A new method for characterizing unresolved gamma-ray point sources and implications for high-energy neutrinos"
3:15 PM Follow up discussion
3:30 PM Coffee/refreshments

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Wednesday, June 17, 2015

- 9:15 AM Frank Calaprice, Princeton University
"CNO neutrinos and the solar metallicity problem- the next generation of solar neutrino experiments"
- 9:45 AM Follow-up Discussion
- 10:00 A Coffee Break
- 10:20 A Kate Scholberg, Duke University
"What stubs and sparkles in vast vats of liquid will teach us about exploding stars"
- 10:50 A Follow-up Discussion
- 11:05 A Ben Jones, MIT
"Decoherence in Neutrino Beams"
- 11:35 A Follow-up Discussion
- 2:00 PM Ann Nelson, University of Washington
"Exotic neutrino-dark matter interactions"
- 2:30 AM Follow-up Discussion
- 2:45 PM Kevork Abazajian, University of California, Irvine
"Active & Sterile Cosmological Neutrinos"
- 3:15 PM Follow-up Discussion
- 3:30 PM Coffee/refreshments
- 6:30 PM Workshop Dinner

Thursday, June 18, 2015

- 9:15 AM Kohta Murase, Penn State
"High energy cosmic neutrinos: implications of new IceCube data"
- 9:45 AM Follow-up Discussion
- 10:00 A Coffee break
- 10:20 A Mary Hall Reno, University of Iowa
"Prompt neutrinos and charm in light of RHIC and the LHC"
- 10:50 A Follow-up Discussion
- 11:05 A Ina Sarcevic, University of Arizona
TBD
- 11:35 A Follow-up Discussion
- 2:00 PM George M. Fuller, University of California, San Diego
Neutrino Flavor Quantum Kinetics: Neutrino mass, dark matter, and cosmology
- 2:30 PM Follow-up Discussion
- 2:45 PM Cecilia Lunardini, Arizona State University
"Neutrinos and gamma rays from the Fermi Bubbles"
- 3:15 PM Follow up discussion
- 3:30 PM Coffee/refreshments
- 4:00 PM Tommy O'Donnell, Berkeley

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"Results from the Search for Neutrinoless Double-Beta Decay of ^{130}Te with CUORE-0"

Friday, June 19, 2015

- 9:15 AM Steen Hannestad, University of Aarhus
"Neutrinos in cosmology"
- 9:45 AM Follow-up Discussion
- 10:00 A Coffee break
- 10:20 A Yvonne Wong, The University of New South Wales
Cosmological Neutrino Bounds
- 10:50 A Follow-up Discussion
- 11:05 A Shunsaku Horiuchi, Virginia Tech
"Multi-messenger investigation of core-collapse supernovae"
- 11:35 A Follow-up Discussion
- 2:00 PM Mauricio Bustamante, Ohio State University
"Ultra-high-energy (UHE) astrophysical neutrinos; UHE neutrino-cosmic ray connection; new predictions of UHE neutrino fluxes from gamma-ray bursts"
- 2:30 AM Follow-up Discussion
- 2:45 PM Sajad Abbar, UNM
TBD
- 3:15 AM Follow-up Discussion
- 3:30 PM Coffee/refreshments

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Monday, June 22, 2015

- 10:30 A Joseph Formaggio, MIT
"Neutrino direct mass measurements & Relic neutrinos"
- 11:00 A Follow-up Discussion
11:15 A TBD
TBD
- 11:45 A Follow-up Discussion
- 3:30 PM Ann Nelson, University of Washington
Moderated Discussion

Tuesday, June 23, 2015

- 3:30 PM Kohta Murase, Penn State
Moderated Discussion

Wednesday, June 24, 2015

- 10:30 A Gail McLaughlin, North Carolina State University
TBD
- 11:00 A Follow-up Discussion
11:15 A Hans-Thomas Janka, Max Planck Institute for Astrophysics
"Neutrinos from supernova explosions --- new features in three dimensions"
- 11:45 A Follow-up Discussion
- 3:30 PM Ina Sarcevic, University of Arizona
Moderated Discussion

Thursday, June 25, 2015

- 10:30 A Shashank Shalgar, University of New Mexico
"Spontaneous breaking of spatial symmetries in collective neutrino oscillations"
- 11:00 A Follow-up Discussion
11:15 A Jorge Piekarewicz, Florida State University
TBD
- 11:45 A Follow-up Discussion
- 3:30 PM Hallsie Reno, University of Iowa
Moderated Discussion

Friday, June 26, 2015

- 3:30 PM Jim Kneller, NC State University
Moderated Discussion