

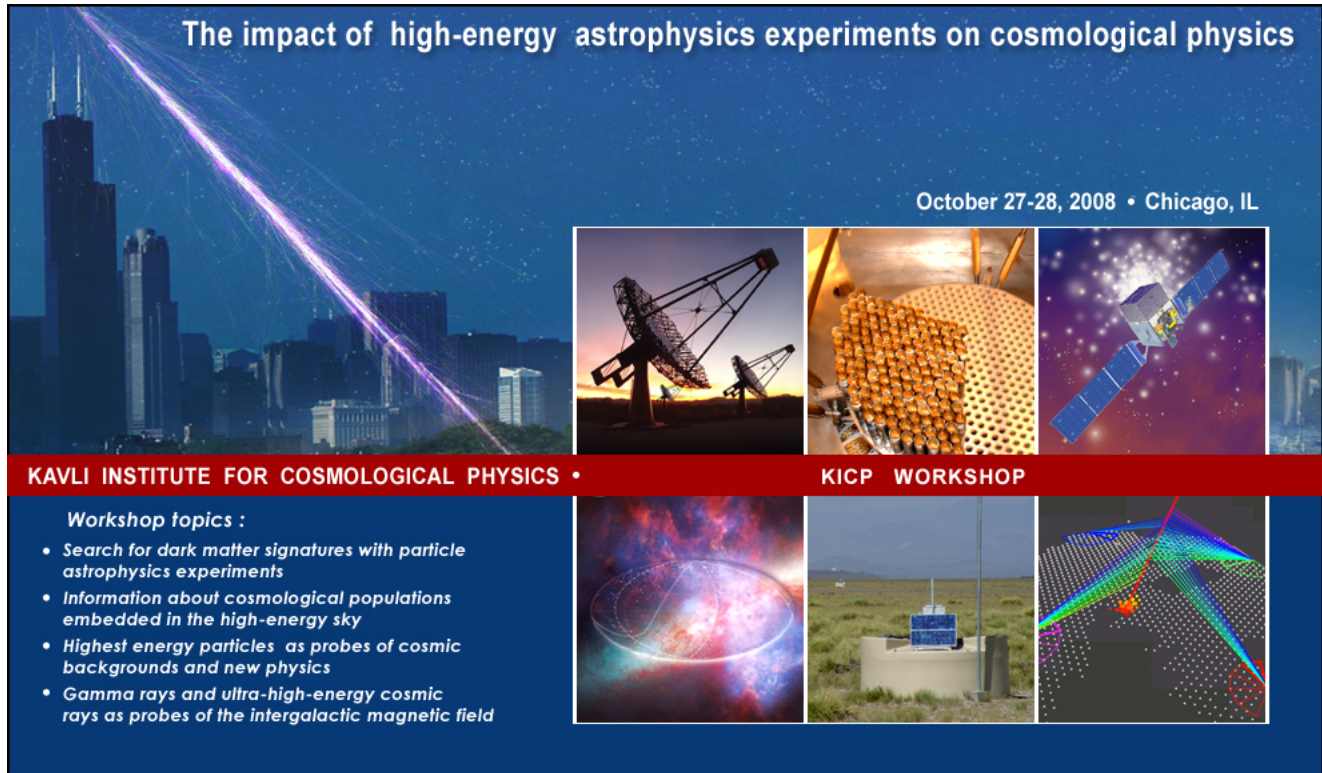
The impact of high-energy astrophysics experiments on cosmological physics

October 27-28, 2008 • Chicago, IL

KAVLI INSTITUTE FOR COSMOLOGICAL PHYSICS • KICP WORKSHOP

Workshop topics :

- Search for dark matter signatures with particle astrophysics experiments
- Information about cosmological populations embedded in the high-energy sky
- Highest energy particles as probes of cosmic backgrounds and new physics
- Gamma rays and ultra-high-energy cosmic rays as probes of the intergalactic magnetic field



<http://kicp-workshops.uchicago.edu/impact-2008/>

WORKSHOP PROGRAM



October 27, 2008 - Monday8:30 AM - 9:00 AM *Coffee and Pastries*9:00 AM - 9:10 AM *WELCOME***HIGHEST ENERGY PARTICLES AS PROBES OF COSMIC BACKGROUNDS AND NEW PHYSICS**9:15 AM - 9:40 AM Luigi Costamante, Stanford University
Invited Talk: *Probing the Extragalactic Background Light (EBL) with gamma-ray blazars*9:40 AM - 9:55 AM Rudy C. Gilmore, UC Santa Cruz
*The Extragalactic Background Light and Gamma-ray Attenuation*9:55 AM - 10:10 AM Luis C Reyes, KICP - University of Chicago
*EBL Studies with the Fermi Gamma-ray Telescope*10:15 AM - 10:45 AM *Coffee Break*10:45 AM - 11:10 AM Stefan J. Wagner, LSW - Heidelberg University
Invited Talk: *Current and future tests of Lorentz Violation*11:10 AM - 11:35 AM Floyd W. Stecker, NASA/GSFC
Invited Talk: *Testing Lorentz Invariance Using Ultrahigh Energy Cosmic Rays*11:35 AM - 11:50 AM John Kelley, University of Wisconsin, Madison
*Searching for Quantum Gravity with AMANDA and IceCube*11:50 AM - 12:05 PM Kalliopi Petraki, UCLA
*Sterile Neutrinos in Cosmology and Astrophysics*12:10 PM - 1:30 PM *Lunch*
(lunch boxes will be provided courtesy of KICP)**SEARCH FOR DARK MATTER SIGNATURES WITH UPCOMING PARTICLE ASTROPHYSICS EXPERIMENTS**1:30 PM - 1:55 PM Stefano Profumo, University of California, Santa Cruz
Invited Talk: *Fundamental Physics with GeV Gamma Rays*1:55 PM - 2:20 PM Jim Buckley, Washington University, St Louis
Invited Talk: *Prospects for detecting dark matter with VERITAS and future gamma-ray instruments*2:20 PM - 2:45 PM Brian L. Winer, Ohio State University
Invited Talk: *Prospects for detecting dark matter with Fermi*

- 2:45 PM - 3:00 PM David C. Latimer, University of Kentucky
Dark-matter constraints from a cosmic index of refraction
- 3:00 PM - 3:30 PM *Coffee Break*
- 3:30 PM - 3:55 PM Dan Hooper, Fermilab
Invited Talk: *High Energy Positrons and Electrons in the Milky Way - Are We Seeing Dark Matter?*
- 3:55 PM - 4:10 PM Michael Schubnell, University of Michigan
Cosmic-Ray Positron and Antiproton Measurements with the HEAT Balloon Experiment
- 4:10 PM - 4:25 PM Darren R. Grant, Pennsylvania State University
Indirect Dark Matter Searches with the IceCube Neutrino Observatory
- 4:25 PM - 4:40 PM Hasan Yuksel, Bartol / University of Delaware
Neutrinos as Probes or Candidates of Dark Matter
- 7:00 PM - 9:00 PM **Workshop Dinner**
Kimbark Plaza 1206 E 53rd St, Chicago, IL 60615 (773) 324-6227

October 28, 2008 - Tuesday8:30 AM - 9:00 AM *Coffee and Pastries*8:30 AM - 9:00 AM *Breakfast***INFORMATION ABOUT COSMOLOGICAL POPULATIONS
EMBEDDED IN THE HIGH-ENERGY SKY**9:00 AM - 9:25 AM Charles D. Dermer, Naval Research Laboratory
Invited Talk: *Cosmological Evolution of Blazars*9:25 AM - 9:50 AM Brian Fields, University of Illinois at Urbana-Champaign
Invited Talk: *Physics of starforming galaxies and the gamma-ray background*9:50 AM - 10:15 AM Shin'ichiro Ando, California Institute of Technology
Invited Talk: *Cosmic Supernova Neutrino Background*10:15 AM - 10:45 AM *Coffee Break*10:45 AM - 11:10 AM Uri Keshet, Center for Astrophysics
Invited Talk: *Physics of galaxy clusters and intergalactic shocks imprinted on the nonthermal sky*11:10 AM - 11:25 AM Amy Y. Lien, University of Illinois at Urbana-Champaign
*Cosmic Core-Collapse Supernovae and Neutrino Background in Upcoming Sky Surveys*11:25 AM - 11:40 AM Patrick W. Young, Colorado State University
*Extracting information from the way the highest energy events cluster*11:40 AM - 11:55 AM Tonia M. Venters, KICP - University of Chicago
*Cosmological Implications of Studies of the Blazar Contribution to the Extragalactic Gamma-ray Background*11:55 AM - 12:10 PM James Braun, University of Wisconsin - Madison
*Searches for Neutrino Point Sources with AMANDA and IceCube*12:10 PM - 12:25 PM John D. Hague, University of New Mexico
*Study of Two Metrics for Anisotropy in the Highest Energy Cosmic Rays*12:30 PM - 1:30 PM *Lunch*
(lunch boxes will be provided courtesy of KICP)**GAMMA RAYS AND ULTRA-HIGH-ENERGY COSMIC RAYS AS
PROBES OF THE INTERGALACTIC MAGNETIC FIELD**

- 1:30 PM - 1:55 PM Ellen Zweibel, University of Wisconsin, Madison
Invited Talk: *Galactic and Extragalactic Magnetic Fields*
- 1:55 PM - 2:20 PM Klaus Dolag, MPA, Garching
Invited Talk: *Simulating magnetic fields within large scale structures and the propagation of UHECRs*
- 2:20 PM - 2:55 PM Stefano Gabici, DIAS, Dublin
Invited Talk: *Gamma Ray Emission associated with UHECR sources*
- 2:55 PM - 3:10 PM Brian Baughman, Ohio State University / Center for Cosmology and Astro-Particle Physics
Limiting Galactic and Extragalactic Magnetic Field Models with UHECRs
- 3:10 PM - 3:30 PM *Coffee Break*
- 3:30 PM *Open Discussion and Adjourn*