

Frank Krennrich

Professor and Chair
Department of Physics and Astronomy Department
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Education

Research Assistant, Cern, Geneva, 1990-91
Diploma in Physics, Ludwig-Maximilians-Universität, München, 1991
PhD, Ludwig-Maximilians-Universität, München, 1996
Research Associate, Max-Planck-Institut für Physik, München, 1991-94
Postdoctoral Associate, Iowa State University, 1994-97,

Research and Professional Experience

Assistant Professor of Physics, Iowa State University, 1997 - 2001
Outstanding Junior Investigator Award by the DOE, High Energy Physics 2000
Leader of Focal Plane Instrumentation for VERITAS, 2000 - 2012
Associate Professor of Physics, Iowa State University, 2001 - 2006
Chair of the VERITAS Executive Committee, 2003 - 2006
Sabbatical at Fred Lawrence Whipple Observatory, 2004 - 2005
Professor of Physics, Iowa State University, 2006 - present
Sabbatical at Argonne National Laboratory, Fall 2008
Spokesperson of AGIS (CTA-US), 2008 - 2013
Fellow of the American Physical Society 2008
Professor and Chair, Iowa State University, 2013 - present

Selected Publications

- VERITAS Observations of the BL Lac Object PG 1553+113, E. Aliu et al., **ApJ**, 799, 7 (2015).
- The Extragalactic Background Light and the Gamma-ray Opacity of the Universe, **Astroparticle Physics**, E. Dwek & F. Krennrich, vol. 43, 112 (2013).
- Detection of Pulsed Gamma Rays Above 100 GeV from the Crab Pulsar, Aliu et al. (The VERITAS Collaboration), **Science** 334, 69 (2011).
- Strong New Constraints on the Extragalactic Background Light in the Near- to Mid-Infrared, M. Orr, F. Krennrich & E. Dwek, **ApJ**, 733, 77 (2011)
- A connection between star formation activity and cosmic rays in the starburst galaxy M82, V.A. Acciari et al. (VERITAS Collaboration), **Nature**, 462, 770 (2009).

- Radio Imaging of the Very-High-Energy Gamma Ray Emission Region in the Central Engine of a Radio Galaxy, V.A. Acciari et al. (VERITAS Collaboration, VLBA 43 GHz M87 Monitoring team, H.E.S.S. Collaboration, MAGIC Collaboration), **Science**, 325, 444 (2009).
- Constraints to Energy Spectra of Blazars based on Recent EBL Limits from Galaxy Counts, F. Krennrich, E. Dwek, & A. Imran, **ApJ Letters**, 689, L93 (2008).

Synergistic Activities

- Design and construction of the four VERITAS focal plane cameras, 2000 - 2007
- Design and construction of the topological camera trigger for VERITAS, 2007 - 2011
- Design and construction of the demonstrator trigger system for the SCT-prototype telescope, 2007 - 2016

Select Recent Invited Talks

- ANNIE at Fermilab: Status and Future Plans, 12th Rencontres de Vietnam, Quy Nhon, Vietnam, August 24, 2016
- The Gamma Ray Opacity of the Universe: Indirect Measurements of the EBL, Rencontres de Vietnam, Quy Nhon, Vietnam, August 9, 2014
- Probing the Universe with Very High Energy Gamma Rays, Physics Colloquium, University of Chicago, January 17, 2013
- The Opacity of the Universe in Gamma Rays: recent Results and Future Prospects, Near Infrared Background and the Epoch of Reionization, University of Texas Cosmology Center, Austin, May 14, 2012
- EDIT (Excellence in Detectors and Instrumentation Technologies) 2012, plenary talk on Cosmic Ray and Gamma Ray Experiments, Fermilab, Feb. 15 2012
- Astroparticle Physics with Cosmic Messengers, Invited talk at Pheno 2010, Madison, May 12 2010

Collaborators and Co-editors

VERITAS Collaboration: J.H. Buckley (Washington U.), K. Byrum (ANL), E. Dwek (NASA), S. Wakely (U. of Chicago), D.A. Williams (UC Santa Cruz), B. Humenski (Columbia U.), A. Weinstein (Iowa State U.)

CTA Collaboration: R.A. Ong (UCLA), V.V. Vassiliev (UCLA), N. Otte (Georgia Tech)

ANNIE Collaboration: M. Sanchez (Iowa State U.), M. Wetstein (Iowa State U.), R. Svoboda (UC Davis)

Graduate and Postdoctoral Advisors and Advisees

Ph.D advisor (1996): Eckart Lorenz Max-Planck Institut für Physik und Astrophysik.

Postdoctoral Sponsor (1994 - 1997): Richard C. Lamb, Iowa State University.

Postdoctoral advisee (1998 - 2004): Stephan LeBohec, University of Utah.
Postdoctoral advisee (2000 - 2002): Dirk Petry, European Southern Observatory.
Postdoctoral advisee (2002 - 2004): Michael Daniel, Fred Lawrence Whipple Observatory.
Postdoctoral advisee (2004 - 2010): Martin Schrödter, Everett Community College.
Postdoctoral advisee (2004 - 2008): Tomo Nagai, unknown.
Postdoctoral advisee (2010 - 2013): Matthew Orr, Shazam Corporation.
Postdoctoral advisee (2013 - 2016): Hugh Dickinson, University of Minnesota.
Postdoctoral advisee (2013 - present): Jonathan Eisch, Iowa State University.