

Asif Imran

Résumé

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Education

- June 2010 **Ph.D.**, *Iowa State University*, Ames, Iowa, Astrophysics.
May 2003 **B.A.**, *Grinnell College*, Grinnell, Iowa, Physics.
With Honors

Skills

- Software** Currently developing the main gamma-ray outburst monitoring system for **HAWC Observatory**. The C++-package with a tightly integrated SQLite backend employs Bayesian statistics to quickly scan the sky for increased gamma-ray emissions in real-time.
Developed C-based libraries for synchronized readout of an array of single board computers with a net throughput rate of 500 MBytes/second and a > 99% up time.
Developed Monte Carlo simulation package for the VERITAS collaboration. The package was utilized for several primary analyses and featured in publications.
- Hardware** Built a data acquisition system for HAWC Observatory from ground-up and successfully deployed it. Currently in operation, the system is capable of handling an unprecedented 500 MBytes/second of raw readout.
- Languages** Python, C, C++, database query languages (SQLite & MySQL)
- Tools** ROOT, IPython, NumPy, SciPy, Matplotlib, Boost, Pandas, PyFits, SQLAlchemy, Git, L^AT_EX, SVN, bash & regex

Research Experience

- 2013 – Present **Wisconsin IceCube Particle Astrophysics Center**, *Madison, Wisconsin*.
Postdoctoral Research Associate
Supervisor: Stefan Westerhoff
Developing analysis framework for fast, real-time monitoring of gamma ray emission with HAWC Observatory.
- 2010-2013 **Los Alamos National Laboratory**, *Los Alamos, New Mexico*.
Postdoctoral Research Associate
Supervisor: Brenda Dingus
Designed and built principal data acquisition system for the HAWC Observatory.
- 2004-2010 **Iowa State University**, *Ames, Iowa*.
Graduate Student Researcher
Supervisor: Frank Krennrich
Analyzed variable gamma-ray emissions from active galaxies. Developed analysis method to measure the density of diffuse extra-galactic radiation field resulting in new limits on emissions from distant galaxies.