

Péter Veres

PERSONAL INFORMATION

Pennsylvania State University
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RESEARCH INTERESTS IN BRIEF

Gamma-ray bursts: dissipative photospheric models and the role of magnetic fields, GRB theoretical models in general, GRBs as cosmological probes, X-ray afterglows, anisotropies, high-energy spectra, gravitational lensing
Radio astronomy: high-redshift active galactic nuclei, polarization
Miscellaneous astronomy: large scale structure, cosmology, topology, astronomical databases.

EDUCATION, EMPLOYMENT

Pennsylvania State University, State College, PA, USA (2011-)

- Post-doctoral fellow
- Advisor: Péter Mészáros

Eötvös Loránd University, Budapest, Hungary (2007-2011)

- Graduate student - PhD
- Thesis title: Gamma-ray Bursts' Physical Properties from Statistical Analyses
- Advisors: Zsolt Bagoly and István Horváth

University College Cork, Cork, Ireland (2006-2007)

- Graduate student
- Thesis topic: The Decaparsec Structure Magnetic Fields of AGNs
- Advisor: Denise Gabuzda

Eötvös Loránd University, Budapest, Hungary (2001-2006)

- MSc. Astronomer
- Thesis topic: Spectra of Gamma-ray Bursts
- Advisor: István Horváth

AWARDS

- Hungarian Scientific Research Fund Grant
(as part of the Hungarian Gamma-ray Burst group) (2009-2013)
- National Science Fund Ireland - Graduate Scholarship (2006-2007)
- National Scientific Competition of Undergraduate Students,
astrophysics category: honorable mention, (2005)
- Hungarian State Scholarship for Students from outside Hungary (2001-2006)
- Mathematics Competition of Hungarian nationals from all over the World
(high school level): First prize (2001)

LANGUAGES

- **Hungarian** : native
- **English** : fluent
- **Romanian** : fluent
- **German** : basic level

COMPUTER SKILLS

- **Programming:** IDL, C/C++, Python, Linux shell scripting
- **Mathematical Packages:** R, SPSS, Mathematica, octave, gnuplot

- **Specific high-energy astronomy and other astronomy related software:** rmfit, FLASH AMR, heasoft(xspec), AIPS, difmap, HEALPix

TEACHING
EXPERIENCE

- Classical physics lab assistant (University College Cork)
- Basic calculus and probability theory (Bolyai Military University)
- Linear algebra (Bolyai Military University)
- Electronics lab assistant (Eötvös University)

OTHER WORK:

- Referee for The Astrophysical Journal
- Supervisor for **József Kóbori** (Eötvös University), MSc. thesis
- Advised informally: **András Kovács** and **Dorottya Szécsi** (Eötvös University), BSc. thesis

REFEREED
PUBLICATIONS:

[HTTP://GO.GGL/DJSyE](http://go.ggl/DJSyE)
(ADS LINK)

- *Magnetically and Baryonically Dominated Photospheric Gamma-Ray Burst Model Fits to Fermi LAT Observations*
P. Veres; Zhang, B.-B., Mészáros, P., 2013, Astrophysical Journal, **764**, 94, (astro-ph/1210.7811)
- *The extremely high peak energy of GRB 110721A in the context of a dissipative photosphere synchrotron emission model*
P. Veres; Zhang, B.-B., Mészáros, P. ; Astrophysical Journal Letters, **761**, L18, (2012), (astro-ph/1208.1790)
- *Searching for galactic sources in the Swift GRB catalog Statistical analyses of the angular distributions of FREDs*
Tello J.C., Castro-Tirado A.J., Gorosabel J., Perez-Ramirez D., Guziy S., **P. Veres**, Bagoly Z., Astronomy and Astrophysics Letters, **548**, 7, (2012), (astro-ph/1210.3699)
- *Single- and Two-component Gamma-Ray Burst Spectra in the Fermi GBM-LAT Energy Range*
P. Veres, Mészáros, P. ; Astrophysical Journal, **755**, 12, (2012), (astro-ph/1202.2821)
- *On the Spectral Lags and Peak Counts of the Gamma-Ray Bursts Detected by the RHESSI Satellite*
Ripa, J.; Mészáros, A.; **P. Veres**, Park, I.H.; Astrophysical Journal, **756**, 44, (2012), (astro-ph/1206.6198)
- *Characteristics of Swift's intermediate-population bursts*
de Ugarte Postigo, A.; Horváth, I.; **P. Veres**; Bagoly, Z.; Kann, D. A.; Thöne, C. C.; Balazs, L. G.; D'Avanzo, P.; Aloy, M. A.; Foley, S.; Campana, S.; Mao, J.; Jakobsson, P.; Covino, S.; Fynbo, J. P. U.; Gorosabel, J.; Castro-Tirado, A. J.; Amati, L.; Nardini, M.; Astronomy and Astrophysics, **525**, A109, (2011), (astro-ph/1006.4469)
- *A distinct peak-flux distribution of the third class of gamma-ray bursts: A possible signature of X-ray flashes?*
P. Veres, Bagoly, Z.; Horváth, I.; Mészáros, A.; Balázs, L.G.; Astrophysical Journal, **725**, 1955, (2010), (astro-ph/1010.2087)

- *Physical parameters of a relativistic jet at very high redshift: the case of the blazar J1430+4204*
P. Veres, Frey, S; Paragi, Z; Gurvits, L, *Astronomy and Astrophysics*, **521**, 6, (2010)
- *Investigating gamma-ray burst data reduction techniques with Swift's instruments*
P. Veres *Advances in Space Research* (2011), **47**, 1356
- *Investigating gamma- and X-ray properties of GRBs using multivariate statistics*
Balázs, L.G., **P. Veres**, *Advances in Space Research* (2011), **47**, 1404
- *Detailed Classification of Swift's Gamma-Ray Bursts*
Horváth, I; Bagoly, Z; Balázs, L.G., de Ugarte Postigo, A, **P. Veres**, Mészáros, A; *Astrophysical Journal*, **713**, 552, (2010)
- *Detection of the ultra-high z short GRB 080913 and its implications on progenitors and energy extraction mechanisms*
Perez-Ramirez, D.; de Ugarte Postigo, A.; Gorosabel, J.; Aloy, M. A.; Guerrero, M. A.; Osborne, J. P.; Page, K. L.; Warwick, R. S.; Horváth, I.; **P. Veres**, Jelinek, M.; Kubanek, P.; Guziy, S.; Bremer, M.; Winters, J. M.; Castro-Tirado, A. J. ; *Astronomy and Astrophysics*, **510**, A105, (2010)
- *Gamma-ray bursts: connecting the prompt emission with the afterglow*
P. Veres, Bagoly, Z. *Baltic Astronomy*, **18**, 284 (2009)
- *Impact on cosmology of the celestial anisotropy of the short gamma-ray bursts*
A. Mészáros, L. G. Balázs, Z. Bagoly, **P. Veres** *Baltic Astronomy*, **18**, 293 (2009)
- *Classification of Swift's gamma-ray bursts*
I. Horváth, L. G. Balázs, Z. Bagoly, **P. Veres**, *Astronomy and Astrophysics*, Volume **489**, L1 (2008)
- *Model-independent methods of describing GRB spectra using BATSE MER data*
P. Veres, Horváth I., Bagoly Z., Balázs L., Mészáros A., Tuszán G., Ryde F., *Il Nuovo Cimento B*, **121**, 1609 (2006) (astro-ph/1001.0286)
- *Analysis of the BATSE continuous MER data*
P. Veres, Horváth I., Balázs L.: *Il Nuovo Cimento C* **28**, 355 (2005) (astro-ph/0510323)

PUBLICATIONS IN
PROCEEDINGS AND
OTHER TYPES OF
PUBLICATIONS:

- *Gamma Ray Bursts: recent results and connections to very high energy Cosmic Rays and Neutrinos*, P. Mészáros, K. Asano, **P. Veres**, PASCOS 12 conference, Merida, Yucatan, Mexico, June 2012, (astro-ph/1209.2436)
- *The High Energy Behavior of Gamma-ray Burst Spectra as Observed by Fermi GBM and LAT* **P. Veres**, P. Mészáros, *Proceedings of the Gamma-Ray Bursts 2012 Conference*. May 7-11, 2012. Munich, Germany.
- *Directional Anisotropy of Swift Gamma-Ray Bursts*, **P. Veres**, Z. Bagoly, I. Horváth, L. G. Balázs, A. Mészáros, J. Kelemen, *AIP Conference Proceedings*,

Volume 1279, pp. 457-459 (2010), (astro-ph/1012.1757)

- *Achromatic Search for Gravitational Lensing in Fermi Data*, Z. Bagoly, **P. Veres** AIP Conference Proceedings, Volume 1279, pp. 293-295 (2010)
- *SGR 0418+5729 Fermi/GBM detection of pulsations* Z. Bagoly, **P. Veres**, I. Horváth, L. G. Balázs, Mészáros A., GRB Coordinates Network, Circular Service, 9506, 1 (2009)
- *Canonical correlation between the gamma and X-ray data of Swift GRBs*, L. G. Balázs, I. Horváth, Peter Mészáros, G. Tusnády, **P. Veres** AIP Conference Proceedings, Volume 1133, pp. 209-211 (2009)
- *Gamma-Ray Burst Groups Observed by Different Satellites* I. Horváth, L. G. Balázs, **P. Veres** AIP Conference Proceedings, Volume 1133, pp. 412-414 (2009)
- *Combined Swift BAT-XRT Lightcurves* **P. Veres**, Z. Bagoly, J. Kelemen, Řípa, J. AIP Conference Proceedings, Volume 1133, pp. 443-445 (2009)
- *Optical observational biases in the GRB redshift* Z. Bagoly, **P. Veres** AIP Conference Proceedings, Volume 1133, pp. 473-475 (2009)
- *Anisotropy in the sky distributions of the short and intermediate gamma-ray bursts: Breakdown of the cosmological principle?* A. Mészáros, L. G. Balázs, Z. Bagoly, **P. Veres** AIP Conference Proceedings, Volume 1133, pp. 483-485 (2009)
- *Observational difference between gamma and X-ray properties of optically dark and bright GRBs*, L. G. Balázs, I. Horváth, Z. Bagoly, A. Mészáros, **P. Veres**, AIP, Conference Proceedings, Volume 1000, pp. 44-47 (2008)
- *Combined Swift BAT-XRT Lightcurves*, **P. Veres**, Z. Bagoly, J. Kelemen, I. Horváth, L. G. Balázs, A. Mészáros, G. Tusnády, AIP Conference Proceedings, Volume 1065, pp. 35-38 (2008)
- *Analysis of the Swift Gamma-Ray Bursts duration*, I. Horváth, L. G. Balázs, Z. Bagoly, J. Kelemen, **P. Veres**, G. Tusnády, AIP Conference Proceedings, Volume 1065, pp. 67-70 (2008)
- *Different satellites-different GRB redshift distributions?* Z. Bagoly, L. G. Balázs, I. Horváth, J. Kelemen, A. Mészáros, **P. Veres**, G. Tusnády, AIP Conference Proceedings, Volume 1065, pp. 119-122 (2008)
- *Magnetic Field Structures of BL Lac Objects on Decaparsec Scales*, **P. Veres**, D. Gabuzda: ASP Conference Series, **386**, 270, (2008), (astro-ph/0707.4579)
- *High energy astrophysics*, **P. Veres**, Bolyai Szemle, Bolyai Military University Publisher **XVI/1.**, 249, (2007)
- *Celestial Positions in Radio and Optical*, S. Frey, **P. Veres**, K. Vida, PADEU, **17**, 1 (2006), (astro-ph/0602184)

TALKS:

- *Gamma-Ray Bursts 2012 Conference*, 7-11 May 2012, Munich, Germany (Talk: **Single- and two-component gamma-ray burst spectra in the Fermi GBM-LAT energy range**)
- *Bolyai-Gauss-Lobachevsky Conference*, Cluj-Napoca, Romania 5 - 9 July 2010 (Talk: **Graviational Lensing Signatures in Gamma-Ray Burst Lightcurves**)
- *5th Conference of Young Researchers in Astronomy and Astrophysics*, Budapest, 2009 September 2-4 (Talk: **Surprisingly strong outburst of an AGN at redshift $z=4.7$**)
- *6th Integral/BART Workshop*, Karlovy Vary, Czech Republic, 26-29 March 2009 (Talk: **Gamma-ray bursts: connecting the prompt emission with the afterglow**)

CONFERENCES
AND SCHOOLS
ATTENDED:

- *The First Galaxies, Quasars & Gamma-Ray Bursts*, Pennsylvania State University, June 6-10, 2010 (Poster: **A New Approach to Identifying X-ray Flashes**)
- *2009 Fermi Symposium*, Washington D.C., 2-5 November 2009 (Poster: **A search for gravitational lensing effects in Fermi GRB data**)
- *The Shocking Universe: Gamma Ray Bursts and High Energy Shock phenomena in the Universe*, San Servolo Island - Venice, 2009 September 14-18 (Poster: **Direct comparison of GRB prompt emission and the afterglow**)
- *Frontiers of Space Astrophysics: Neutron Stars & Gamma Ray Bursts: Recent Developments & Future Directions*, Cairo & Alexandria, Egypt, March 30 - April 4 2009 (Poster: **Joining Swift's Gamma-ray Burst Lightcurves**)
- *The Sixth Huntsville Gamma-Ray Burst Symposium*, Huntsville, Alabama, 20-23 October 2008 (Poster: **Joining Swift BAT and XRT Lightcurves**)
- *Extragalactic Jets: Theory and Observation from Radio to Gamma Ray*, Girdwood, Alaska, 21-24 May 2007 (Poster: **The Magnetic Field Structures of BL Lac objects on Scales of Tens of Parsecs**)
- *Institute of Physics Ireland meeting*, Birr, Ireland, 30 March – 1 April 2007 (Poster: **Polarization Sensitive BL Lac Measurements at 18 cm**)
- *8th EVN Symposium 2006 Exploring the Universe with the real-time VLBI*, Toruń, Poland, 26-29 September 2006 (Poster: **Comparing the SDSS and VLBI quasar and galaxy positions**)
- *2005 Course on Gamma-Ray Bursts: from Astrophysics to Cosmology*, L'Aquila, Italy, 12-16 September 2005