

# High-Energy Phenomena in Relativistic Outflows V (HEPRO V)

La Plata, Argentina, October 5<sup>th</sup> - 8<sup>th</sup>, 2015

## Conference Program

### Monday, October 5<sup>th</sup>

8:00 – 9:00 Registration

9:00 – 9:20 Welcome

9:20 – 10:10 Bell, Tony - *Particle acceleration in radio galaxies* (invited talk)

10:10 – 10:30 Baring, Matthew - *Probing turbulence and acceleration at relativistic shocks in blazar jets*

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10:30 – 11:00 Coffee break

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11:00 – 11:20 Kadowaki, Luis - *The role of fast magnetic reconnection in microquasars and AGN*

11:20 – 11:40 Riquelme, Mario - *Electron heating and transport in collisionless accretion disks*

11:40 – 12:10 Araudo, Anabella - *Magnetic field amplification and particle acceleration in the hotspots of FR II radiogalaxies* (highlight talk)

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12-10 – 14:10 Lunch

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14:10 – 15:00 Spitkovski, Anatoly - *Particle acceleration in relativistic outflows* (invited talk)

15:00 – 15:20 Janiuk, Agnieszka - *Non-linear variability in microquasars in relation with the winds from their accretion disks*

15:20 – 15:40 Chattopadhyay, Indranil - *Evolution of aspect ratio of relativistic astrophysical jets*

15:40 – 16:00 Singh, Chandra - *Spatial growth of current driven instability in rotating relativistic jets*

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16:00 – 16:30 Coffee break

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16:30 – 17:20 Barkov, Maxim - *Numerical simulations of relativistic jets* (invited talk)

17:20 – 17:40 del Valle, Ma. Victoria - *High-energy studies of cloud-disc collisions*

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18:30 – 19:45 Welcome cocktail

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**Tuesday, October 6<sup>th</sup>**

9:00 – 9:50	Pian, Elena - <i>Relativistic jets: an overview of recent progress</i> (invited talk)
9:50 – 10:10	Böttcher, Markus - <i>Recent results of H.E.S.S. observations of extragalactic jet sources</i>
10:10 – 10:30	Tavecchio, Fabrizio - <i>Extreme BL Lacs: probes for cosmology and UHECR source candidates</i>
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10:30 – 11:00	Coffee break
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11:00 – 11:20	Berton, Marco - <i>Exploring the parent population of beamed NLS1s: from the black hole to the jet</i>
11:20 – 11:40	Melioli, Claudio - <i>AGN jets and their interplay with the host galaxy and the central black hole</i>
11:40 – 12:10	Mirabel, Félix - <i>Jet-induced star formation</i> (highlight talk)
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12:10 – 14:10	Lunch
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14:10 – 15:00	Abraham, Zulema - <i>Jets studies in Latin America</i> (invited talk)
15:00 – 15:20	Kapanadze, Sergo - <i>X-Ray Spectral Curvature in HBLs</i>
15:20 – 15:40	Kurtanidze, Omar - <i>Optical study of TeV blazars</i>
15:40 – 16:00	Paredes-Fortuny, Xavier - <i>Numerical simulations of the collision of an inhomogeneous stellar wind and a relativistic pulsar wind in a binary system</i>
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16:00 – 16:30	Coffee break
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16:30 – 17:00	Bosch-Ramon, Valenti - <i>The effects of non-thermal processes on the dynamics of colliding star-pulsar winds</i> (highlight talk)
17:00 – 17:20	Dong, Ai-Jun - <i>The X-ray spectral evolution and radio-X-ray correlation in radiatively efficient black-hole sources</i>
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18:00 – 19:00	Outreach talk at Planetario de la Ciudad de La Plata: " <i>Radiación invisible en el Universo</i> ", by Dr. Josep Maria Paredes (in Spanish)
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**Wednesday, October 7<sup>th</sup>**

9:00 – 9:50	Khangulyan, Dmitry - <i>High-energy emission from relativistic jets</i> (invited talk)
9:50 – 10:10	Moreno de la Cita, Víctor - <i>Coupling hydrodynamics and radiation calculations for star-jet interactions in AGN</i>
10:10 – 10:30	Kocharovskiy, Vladimir - <i>Analytical theory of self-consistent current sheets in multicomponent relativistic plasma with arbitrary energy distribution of particles</i>
10:30 – 11:00	Coffee break
11:00 – 11:20	Pellizza, Leonardo - <i>PRINCE: gamma-ray production and transport in cosmic environments</i>
11:20 – 11:40	Pepe, Carolina - <i>Spectral energy distribution, polarisation and synthetic radio maps of Cygnus X-1: a lepto-hadronic jet model</i>
11:40 – 12:10	Bednarek, Wlodek - <i>High energy radiation from globular clusters</i> (highlight talk)
12:10 – 14:10	Lunch
14:10 – 15:00	Giannios, Dimitrios - <i>Flares in relativistic jets from tidal disruption events</i> (invited talk)
15:00 – 15:20	Sushch, Iurii - <i>Role of the disk environment in the observed TeV light curve from the binary system PSR B1259-63/LS 2883</i>
15:20 – 15:40	Marcote, Benito - <i>Physical properties of the gamma-ray binary LS 5039 through low and high frequency radio observations</i>
15:40 – 16:00	Paredes, Josep M. - <i>Super-orbital variability of the gamma-ray binary LS I 61 303 studied with MAGIC</i>
16:00 – 16:30	Coffee break
16:30 – 17:00	Altamirano, Diego - <i>Fireworks in the sky: the 2015 outburst of the black hole LMXB V404 Cyg</i> (highlight talk)
17:00 – 17:20	Rodríguez-Kamenetzky, Adriana - <i>High energy processes in protostellar jets</i>
19:30 – 23:30	Conference dinner at restaurant <i>A Pampa!</i>

**Thursday, October 8<sup>th</sup>**

- 9:00 – 9:50 De Colle, Fabio - *Gamma-ray bursts: jet propagation* (invited talk)
- 9:50 – 10:10 López-Camara, Diego - *Three-dimensional simulations of variable GRB jets*
- 10:10 – 10:30 Fraija, Nissim - *Evidence of magnetic field amplification in the neutron star merger in some GRBs*
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- 10:30 – 11:00 Coffee break
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- 11:00 – 11:20 Penacchioni, Ana Virginia - *Estimating GRB detection rate with MIRAX*
- 11:20 – 11:40 Bisnovatyi-Kogan, Gennady - *Magnetorotational supernovae and jet formation*
- 11:40 – 12:10 Timokhin, Andrey - *Generation of electron-positron plasma in pulsar magnetosphere* (highlight talk)
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- 12:10 – 14:10 Lunch
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- 14:10 – 15:00 Arons, Jonathan - *Current sheets in pulsar wind nebulae* (invited talk)
- 15:00 – 15:20 Morlino, Giovanni - *Mass-loading of bow shock pulsar wind nebulae*
- 15:20 – 15:40 Ng, Stephen - *Mapping the magnetic field structure of elongated pulsar wind nebulae*
- 15:40 – 16:00 Kalapotharakos, Constantinos - *Modeling pulsar high-energy emission in the Fermi era*
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- 16:00 – 16:30 Coffee break
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- 16:30 – 17:00 Porth, Oliver - *Termination shock emission and particle transport in PWNe* (highlight talk)
- 17:00 – 17:20 Farewell

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9:00 - 9:20	Welcome	Pion - Relativistic jets: an overview of recent progress 9:00 - 9:30	Khangulyan - High-energy emission from relativistic jets	De Colle - Gamma-ray bursts; jet propagation
9:20 - 10:10	Bell - Particle acceleration in radio galaxies	Böttcher - Recent results of H.E.S.S. observations of extragalactic jet sources 9:30 - 10:10	Moreno de la Cita - Coupling hydrodynamics and radiation calculations for star-jet interactions in AGN	López-Cámara - Three-dimensional simulations of variable GRB jets
10:10 - 10:30	Baring - Probing turbulence and acceleration at relativistic shocks in blazar jets	Tavecchio - Extreme BL Lacs: probes for cosmology and UHECR source candidates 10:10 - 10:30	Kocharyan - Analytical theory of self-consistent current sheets in multicomponent relativistic plasma with arbitrary energy distribution of particles	Fraija - Evidence of magnetic field amplification in the neutron star merger in some GRBs
10:30 - 11:00	Coffee break	Coffee break 10:30 - 11:00	Coffee break	Coffee break
11:00 - 11:20	Kądziński - The role of fast magnetic reconnection in microquasars and AGN	Berton - Exploring the parent population of beamed NLS1s: from the black hole to the jet 11:00 - 11:20	Pellizo - PRINCE gamma-ray production and transport in cosmic environments	Penocchio - Estimating GRB deflection rate with MIPAX
11:20 - 11:40	Riquelme - Electron heating and heat transport in collisionless accretion disks	Meloni - AGN jets and their interplay with the host galaxy and the central black hole 11:20 - 11:40	Pépe - Spectral energy distribution, polarization and synthetic radio maps of Cygnus X-1: a leptohadronic jet model	Bisnovatyi-Kogon - Magnetotational supernovae and jet formation
11:40 - 12:10	Araudo - Magnetic field amplification and particle acceleration in the hotspots of FR II radio galaxies	Mirabel - Jet-induced star formation 11:40 - 12:10	Bezdarek - High energy radiation from globular clusters	Timokhin - Generation of electron-positron plasma in pulsar magnetosphere
12:10 - 14:10	Lunch	Lunch 12:10 - 14:10	Lunch	Lunch
14:10 - 15:00	Spitkovski - Particle acceleration in relativistic outflows	Abraham - Jets studies in Latin America 14:10 - 15:00	Giannios - Flares in relativistic jets from tidal disruption events	Atoms - Current sheets in pulsar wind nebulae
15:00 - 15:20	Januk - Non-linear variability in microquasars in relation with the wind from their accretion disks	Koparadze - X-Ray Spectral Curvature in HBLs 15:00 - 15:20	Suhich - Role of the disk environment in the observed TeV light curve from the binary system PSR B1259-63/LS 2883	Morino - Mass-loading of bow shock pulsar wind nebulae
15:20 - 15:40	Chatteropadhyay - Evolution of aspect ratio of relativistic astrophysical jets	Kurtanidze - Optical study of TeV blazars 15:20 - 15:40	Marcolle - Physical properties of the gamma-ray binary LS 5039 through low and high frequency radio observations	Ng - Mapping the magnetic field structure of elongated pulsar wind nebulae
15:40 - 16:00	Singh - Spatial growth of current driven instability in rotating relativistic jets	Paredes-Fortuny - Numerical simulations of the collision of an inhomogeneous stellar wind and a relativistic pulsar wind in a binary system 15:40 - 16:00	Paredes - Super-orbital variability of the gamma-ray binary LS 1 + 1303 studied with MAGIC	Kadolphorakos - Modeling pulsar high-energy emission in the Fermi era
16:00 - 16:30	Coffee break	Coffee break 16:00 - 16:30	Coffee break	Coffee break
16:30 - 17:20	Barkov - Numerical simulations of relativistic jets	Borch-Roman - The effects of non-thermal processes on the dynamics of colliding star-pulsar winds 16:30 - 17:00	Allamriano - Fireworks in the sky: the 2015 outburst of the black hole UM08 V404 Cyg	Porh - Termination shock emission and particle transport in PWNs
17:20 - 17:40	del Valle - High-energy studies of cloud-disk collisions	Dong - The X-ray spectral evolution and radio-X-ray correlation in radiatively efficient black-hole sources 17:00 - 17:20	Rodríguez-Camenezky - High energy processes in protostellar jets	Forewell
	18:30- 19:45 - Welcome cocktail	18:00 - 19:00 - Outreach talk at Planetario de la Ciudad de La Plata: "Radiación invisible en el Universo", by Dr. Josep Maria Paredes (In Spanish)	19:30 - 23:30 - Conference dinner	
		Invited talk	Highlight talk	Contributed talk