

A workshop on
**The high-energy astrophysics of
outflows from compact objects**

held at

Ringberg Castle, Tegernsee,

December 7th - 13th, 2008

organized by

John Kirk (MPI-K) & Christian Fendt (MPIA)

Program (as of Dec. 13th, 2008):

Sunday, December 7th

18:30 – 20:00 *Welcome snack & drinks*

Monday, December 8th

09:00 - 09:15 *Welcome, LOC announcements* (John Kirk & Christian Fendt)

09:15 - 09:45 Mitch Begelman: *Relativistic outflows: unsolved problems*

09:45 - 10:15 Robert Laing: *Precision jet physics: observations and models of large-scale relativistic outflows in radio galaxies*

10:15 - 10:45 *Coffee break*

10:45 - 11:15 Aneta Siemiginowska: *AGN jets*

11:15 - 11:45 Andrei Beloborodov: *GRB explosions*

11:45 - 12:15 Yves Gallant: *High-energy observations of pulsar wind nebulae*

12:30 - 14:00 *Lunch break*

14:00 - 14:30 Michal Ostrowski : *Monte-Carlo modelling of particle acceleration at relativistic shocks and observational constraints*

14:30 - 15:00 Henk Spruit: *Jet launching: The disk-jet boundary*

15:00 - 15:30 *Coffee break*

15:30 - 16:00 Heino Falcke: *The power of jets*

16:00 - 16:30 Fumio Takahara: *A fireball mechanism of relativistic outflow production in AGN*

16:30 - 17:00 Elena Amato: *Theory of pulsar wind nebulae*

18:30 - 19:30 *Dinner break*

20:00 - 20:30 Judith Croston: *Strong shocks and particle acceleration from expanding radio-galaxy lobes*

20:30 - 21:00 Frederic Daigne: *High-energy emission in GRBs*

21:30 - 24:00 *Social evening @ Ringberg castle*

Tuesday, December 9th

- 09:15 - 09:45 Anatoly Spitkovsky: *Particle acceleration in collisionless shocks*
- 09:45 - 10:15 Guillaume Dubus: *High-energy astrophysics of outflows from gamma-ray binaries*
- 10:15 - 10:45 *Coffee break*
- 10:45 - 11:15 Petar Mimica: *Spectral evolution of superluminal components in parsec-scale jets*
- 11:15 - 11:45 Rony Keppens: *Extragalactic jets with helical magnetic fields: relativistic MHD simulations*
- 11:45 - 12:15 Siming Liu: *Energy dissipation and particle acceleration in MHD turbulence: Generated at collision-less astrophysical shocks*
- 12:30 - 14:00 *Lunch break*
- 14:00 - 14:30 Ioannis Contopoulos: *The 3D -structure of the pulsar magnetosphere*
- 14:30 - 15:00 Thomas Krichbaum: *Looking into the center of Active Galactic Nuclei*
- 15:00 - 15:30 Zakaria Meliani: *Stability of relativistic two-component jets*
- 15:30 - 16:00 *Coffee break*
- 16:00 - 16:30 Sebastian Jester: *De-beaming of observations of relativistic jets*
- 16:30 - 17:00 Denise Gabuzda: *New evidence for helical B-fields associated with AGN jets*
- 17:00 - 17:30 Masahiro Hoshino: *Particle acceleration and injection problem in collisionless shocks*
- 17:45 - 18:30 *Tour through the castle*
- 18:30 - 19:30 *Dinner break*
- 20:00 - 22:00 *Poster session with beer & wine*

Wednesday, December 10th

- 09:00 - 09:30 Dan Schwartz: *Chandra observations of relativistic quasar jets*
- 09:30 - 10:00 Reinhard Schlickeiser: *Synchrotron and synchrotron self-Compton light curves of flaring blazars*
- 10:00 - 10:30 Jose Gracia: *Synthetic synchrotron emission maps from MHD models for the jet of M87*
- 10:30 - 11:00 *Coffee break*
- 11:00 - 11:30 Andrew Taylor: *The UHE cosmic ray composition and neutrino fluxes from relativistic outflows*
- 11:30 - 12:00 Boris Stern: *Photon breeding mechanism of the blazar emission: working regimes and observational signatures*
- 12:00 - 12:30 Serguei Komissarov: *Blandford-Znajek mechanism and GRB jets*
- 12:30 - 14:00 *Lunch break*
- 14:30 - 18:00 *Free afternoon; Hiking tours; Sightseeing/shopping in Tegernsee/Rottach-Egern*
- 18:30 *Taxi departure to Enzian-Huette*
- 19:00 - 23:00 *Dinner at Enzian Huette*

Thursday, December 11th

- 09:15 - 09:45 Miguel-Angel Aloy: *Anomalous boundary layers in relativistic jets*
- 09:45 - 10:15 Andrea Mignone : *Deceleration of 3D relativistic magnetized jets in FRI sources*
- 10:15 - 10:45 *Coffee break*
- 10:45 - 11:15 Rainer Moll: *Simulations of kink instabilities in expanding jets*
- 11:15 - 11:45 Tony Bell: *New cosmic-ray hydrodynamics: shock breakout, collimated outflow and magnetic field evolution*
- 11:45 - 12:15 Paul Dempsey: *Eigenfunction approaches to problems in relativistic DSA*
- 12:30 - 14:00 *Lunch break*
- 14:00 - 14:30 Apostolos Mastichiadis: *The supercritical pile model for GRBs*
- 14:30 - 15:00 Julian Pittard: *Particle acceleration and non-thermal emission from colliding wind binaries*
- 15:00 - 15:30 Frank Rieger: *Non-blazar AGNs as very high-energy sources*
- 15:30 - 16:00 *Coffee break*
- 16:00 - 18:00 *Poster session & free discussion*
- 18:30 - 20:00 *Bavarian buffet @ Ringberg castle*

Friday, December 12th

- 09:00 - 09:30 Dimitrios Giannios: *Magnetically dominated GRB flows: dynamics, prompt and afterglow emission*
- 09:30 - 10:00 Lorenzo Sironi: *Particle acceleration in relativistic magnetized collisionless pair shocks: Dependence of shock acceleration on magnetic obliquity*
- 10:00 - 10:30 Guy Pelletier: *Fermi acceleration at relativistic shocks with non-zero mean magnetic field*
- 10:30 - 10:45 *Coffee break*
- 10:45 - 11:15 Brian Reville: *The diffusion properties of protons in supernova shock precursors with amplified turbulent magnetic fields*
- 11:15 - 11:45 Oliver Porth: *MHD simulations of relativistic jet formation*
- 11:45 - 12:15 Juri Poutanen: *Gamma-ray burst synchrotron self-Compton emission from stochastically accelerated electrons*
- 12:30 - 14:00 *Lunch break*
- 14:00 - 14:30 Stefan Wagner: *A bright VHE Gamma-ray outburst in PKS 2155-304: What have we learnt?*
- 14:30 - 15:30 Annalisa Celotti: *Open discussion: future steps /strategies; wishlist off/for observers/theoreticians*
- 15:30** *End of workshop*
- 15:30 *Coffee & cakes*

