

# **Workshop on Blazar Variability across the Electromagnetic Spectrum**

**mardi 22 avril 2008 - vendredi 25 avril 2008**

**Ecole Polytechnique**

## **Programme Scientifique**

**Afternoon April 22: Welcomes, Introduction, the blazar paradigm presentation**

**Welcome**

**Annalisa Celotti** : blazars: the broad-band observational point of view

**Amir Levinson**: Relativistic flows in active galaxies

**Juri Poutanen**: Pair production and cascades in AGN

**Karl Mannheim**: Can short variability time scales be reconciled with hadronic emission?

**Morning April 23, the soft side: radio, IR, optical (photometric and polarimetric variability)**

**Svetlana Jorstadt**: VLBI observations of blazars

**Denise Gabuzda**: VLBI polarisation variability and implications for jet models

**Esko Valtaoja**: Total intensity radio variability in blazars

**Gino Tosti** : IR/optical/UV variability (photometric, spectral,polarization) in blazars

**Eric Perlman**: thermal AGN signatures in Blazars

**Afternoon April 23, the hard side: soft/hard X-ray, gamma ray and VHE gamma ray reviews**

**Alan Marscher**:Long-term X-ray variability in blazars and its multiwaveband context

**Julie McEnergy**: HE gamma-ray variability, what we know, where we will know more

**Wystan Benbow**: Very High Energy variability (flux, spectral) - what we have learned

**Morning April 24: (end of previous session) presentations on analysis tools (linear, non-linear)**

**Robert Wagner:** Correlations within/between the two radiative populations

**Ian McHardy:** aperiodic variability and emission processes, from BHs to SMBHs

**Jun Kataoka:** How to Characterize aperiodic variability (PDS, structure functions, ..): (use cases, biases ) with synchrotron radiation

**Bernard Degrange:** How to Characterize aperiodic variability (PDS, structure functions, PDS:use cases, biases) at very high energies

#### **Afternoon April 24: mechanisms at play and their inherent variability**

**John Kirk:** particle acceleration mechanisms and variability in relativistic flows (stochastic processes, shocks, magnetic reconnection, matter/radiation dominated scenarios)

**Gilles Henri:** A unified time-dependant view of relativistic jets

**Chuck Dermer/ Justin Fink:** Multiwavelength Synchrotron/Compton Spectral Analysis of TeV Blazars and FSRQs: A New Approach

**R Moderski:** Radiative outputs from blazars (radiative processes, escape, light crossing, KN effects, emphasis on what we learn from the synchrotron bump about the underlying particle distributions).

**Stefan Wagner:** propagation effects in VHE gamma-rays: the physics, how to find them (e.g. Quantum gravity effects, Lorentz invariance violations..)

#### **Morning April 25: What will future instruments improve, which measurements do we need, summary talk**

**Hélène Sol:** Unification scenarios: the case of M87

**Greg Madejski:** The next generation of space-based observatories  
(nuStar, Constellation X, ..) and their potential for variability determinations

**Michael Punch:** Strengths and limitations of ACTs (present and future) for transient VHE sources

**Philip Kaaret:** Summary talk, what have we learned, outstanding questions