

# BREAKING THE LIMITS Super-Eddington accretion onto compact objects Arbatax, September 19-23, 2016

**Conference Program** 

# Monday, September 19th 2016

| Time        | Contribution  |
|-------------|---|
| 8:30-9:30   | Registration  |
| 9:30-9:45   | Welcome   |
| SESSION 1   | Accretion and ejection physics  |
| 9:45-10:15  | <b>Alexander Sadowsky</b> : Simulating accretion flows - from the lowest to the highest accretion rates                               |
| 10:15-10:30 | Matteo Bugli: Non-ideal GRMHD simulations of thick accretion disks around black holes: connecting small and large scales              |
| 10:30-10:45 | Bhupendra Mishra: Thermal instability (or not?) in three-dimensional, global, radiative GRMHD simulations of geometrically thin discs |
| 10:45-11:15 | Coffee break  |
| 11:15-11:30 | Kohei Inayoshi: Hyper-Eddington accretion flows onto massive black holes  |
| 11:30-11:45 | Salvatore Cielo: Bursty AGN jets in compact galaxies, from 3D simulations   |
| 11:45-11:12 | Ileyk El Mellah: Numerical simulations of wind accretion onto compact objects : a multi-scale problem                                 |
| 12:00-12:30 | Discussion  |
| 12:30-15:00 | Lunch break   |
| SESSION 2   | Black hole growth and galaxy evolution  |
| 15:00-15:30 | <b>Andrew King</b> : Theory of black hole growth and galaxy evolution   |
| 15:30-16:00 | <b>Marcella Brusa</b> : Observations of black hole growth and galaxy evolution  |
| 16:00-16:15 | Felix Mirabel: Stellar Black Holes Formed in the Dark   |
| 16:15-16:30 | Hannalore Gerling-Dunsmore: Small Seed Black<br>Hole Growth in Various Accretion Regimes  |
| 16:30-17:00 | Coffee break  |
| 17:00-17:15 | Yuya Sakurai: Hyper-Eddington accretion onto a black hole with super-Eddington luminosity   |

| 17:15-17:30 | Alessandro Lupi: Growing massive black holes via super-critical accretion of stellar mass seed                         |
|-------------|--|
| 17:30-17:45 | Stergios Amarantidis: The earliest accreting supermassive black holes: indications from models for future observations |

# Tuesday, September 20th 2016

|   | Time        | Contribution   |
|---|-------------|--|
|   | 9:30-9:45   | Laura Blecha: Uncovering the Signatures of Obscured AGN in Mergers   |
|   | 9:45-10:00  | Benny Trakhtenbrot: New Constraints on the<br>Radiative Efficiencies of the Highest-Redshift<br>Quasars              |
|   | 10:00-10:30 | Discussion   |
|   | 10:30-11:00 | Coffee break   |
| I | SESSION 3   | Active Galactic Nuclei and quasars   |
|   | 11:00-11:30 | Chris Reynolds   |
|   | 11:30-11:45 | Francesco Tombesi: Evidence for a super-<br>Eddington wind in the ultraluminous infrared<br>galaxy IRAS F11119+3257? |
|   | 11:45-12:00 | James Reeves: Broad Soft X-ray Absorption Lines from the Quasar Wind in PDS 456.                                     |
|   | 12:00-12:15 | Valentina Braito: Revealing the nature of AGN winds; from the fast to the slow components                            |
|   | 12:15-15:00 | Lunch break  |
|   | 15:00-15:15 | Kouichi Hagino: Ultra-fast disk wind from a high accretion rate black hole 1H 0707-495                               |
|   | 15:15-15:30 | Francesca Panessa: AGN from low to high Eddington ratios: the X-ray and radio perspective                            |
|   | 15:30-15:45 | Martin Ward: New evidence that some of the gamma-ray detected Narrow Line Seyfert 1s are Super Eddingtion Sources    |
|   | 15:45-16:00 | Manuela Bischetti: Revealing the heaviest, highly-accreting SMBHs at the heart of hyperluminous quasars              |
|   | 16:00-16:15 | Mary Loli Martínez-Aldama: Exploring the spectral properties of highly accreting quasars at high redshift            |
|   | 16:15-16:30 | Ken Ebisawa: Origin of spectral variations of Seyfert 1 galaxies   |
|   | 16:30-17:00 | Coffee break   |
|   |             |  |

|   | 17:00-17:15 | Misaki Mizumoto: Characteristic X-ray spectral variations in the iron L-band of IRAS 13224-3089, 1H 0707-495 and NGC 4051   |
|---|-------------|---|
|   | 17:15-17:30 | Tracey Jane Turner: Measuring Light Echos in NGC 4051   |
|   | 17:30-17:45 | Emanuele Nardini: Discovery of transient iron fluorescence in the bare Seyfert Ark 120  |
|   | 17:45-18:00 | Yoshiyuki Inoue: Discovery of the millimeter excess in a nearby Seyfert nucleus: Toward unveiling the magnetic field in the vicinity of a supermassive black hole |
|   | 18:00-18:15 | Filippos Koliopanos: In search of the missing population of intermediate mass black holes   |
|   | 18:15-18:45 | <b>Discussion</b> - Andrew King   |
| • | 19:00-23:30 | SOCIAL DINNER   |
|   |             |   |

### Wednesday, September 21st 2016

| Time         | Contribution   |
|--------------|--|
| SESSION 5(1) | Ultraluminous X-ray sources                              |
| 9:30-10:00   | <b>Mar Mezcua</b> : Multiwavelength observations of ULXs |
| 10:00-10:15  | Matteo Bachetti: M82 X-2: an ultraluminous pulsar        |
| 10:15-10:30  | Marianne Heida: NIR spectroscopy of ULXs                 |
| 10:30-10:45  | Kristhell López: Near Infrared Counterparts of ULXs      |
| 10:45-11:00  | Hannah Earnshaw: Soft ULXs at the Eddington Threshold    |
| 11:00-11:30  | Coffee break   |
| SESSION 7    | New and future observatories                             |
| 11:30-12:00  | Didier Barret: Athena                                    |
| 12:00-12:30  | Nicolo' D'Amico: SRT and INAF missions                   |
| 12:30-13:00  | Discussion   |
| 13:00-14:00  | Lunch break  |
|              |  |
| 14:00-20:00  | SOCIAL TRIP to the Sardinia Radio Telescope              |

### **Thursday, September 22nd 2016**

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|------------------------------|---|
| Time                         | Contribution  |
| SESSION 4                    | Galactic super-Eddington black holes and neutron stars  |
| 9:30-10:00                   | Rob Fender: Review talk   |
| 10:00-10:15                  | Katja Pottschmidt: Broad band continuum spectra of accreting pulsars around / above the critical luminosity                                 |
| 10:15-10:30                  | Rebecca Nealon: QPOs from misaligned accretion discs  |
| 10:30-11:00                  | Coffee break  |
| 11:00-11:15                  | Valery Suleimanov: Super-Eddington accretion luminosity of highly magnetized neutron stars  |
| 11:15-11:30                  | Jamie Court: Exotic Variability in IGR<br>J17091-3624; A Comparison with GRS<br>1915+105  |
| 11:30-12:00                  | Discussion - Felix Mirabel  |
| 12:00-15:00                  | Lunch break   |
| SESSION 5(2)                 | Ultraluminous X-ray sources (2)   |
| 15:00-15:30                  | Ken Ohsuga: Theory of ULXs  |
| 15:30-16:00                  | Matthew Middleton: Observations of ULXs   |
| 16:00-16:15                  | Tim Roberts: At the extremes of super-<br>Eddington accretion   |
| 16:15-16:30                  | Andrew Sutton: Crossing the Eddington limit: investigating accretion disc spectra in ultraluminous X-ray sources and sub-Eddington binaries |
| 16:30-17:00                  | Coffee break  |
| 17:00-17:15                  | Ciro Pinto: Discovery of powerful winds in ultraluminous X-ray sources  |
| 17:15-17:30                  | Michal Bursa: Effects of geometry and mass accretion rate on thermal spectra of ULX sources   |
| 17:30-17:45                  | Shogo Kobayashi: Comparing ULXs with the other High-Eddington Sources   |
| 17:45-18:00                  | Takumi Ogawa: A unified model for ULXs and ULSs; radiation hydrodynamics simulations of super-Eddington accretion flows                     |

### Friday, September 23rd 2016

| Time        | Contribution  |
|-------------|---|
| SESSION 6   | Gamma-ray bursts and tidal disruption events  |
| 9:30-10:00  | <b>Stefanie Komossa</b> : Jetted and non-jetted tidal disruption events   |
| 10:00-10:30 | Andrei Beloborodov: Review of GRBs  |
| 10:30-11:00 | Coffee break  |
| 11:00-11:15 | Lixin Jane Dai: Tidal disruption events as a probe of super-Eddington accretion   |
| 11:15-11:30 | Erin Kara: Relativistic reverberation in a tidal disruption event   |
| 11:30-11:45 | Ayako Ishii: Coupled Computation of Radiative<br>Transfer with Relativistic Hydrodynamics<br>Relevant to GRB Emission Process |
| 11:45-12:15 | Discussion - Luigi Piro   |
| 12:15-12:30 | Conclusions   |

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