

A Centenary of Astrophysical Jets: Observation, Theory, and Future Prospects

Tuesday 23 July 2019 - Friday 26 July 2019

SKA Global Headquarters

Scientific Programme

Download the FULL conference programme here - [Conference Programme]

Download the ABSTRACT Booklet here - [Book of Abstracts]

Key topics:

Jet generation & launching

Propagation

Dissipation

Feedback

Range of subjects:

Launch & acceleration mechanism

Radiation processes

Particle acceleration

Theory (numerical & analytical simulations)

Diffusive shock acceleration, PIC, reconnection

Proper motion, VLBI and small scale jet

Large scale radio jets (observation & theory)

Superluminal motion & relativistic particles

Magnetic fields theory

Accretion modes & jets

Multi-messenger (cosmic rays, neutrinos & gravitational waves)

Winds, molecular outflows, cluster-shock & bubbles

Large scale environment

X-ray binaries, cavities & driven shocks

Gamma rays from jets/CTA

TALK Summary

Day 1: Tuesday 23rd July

Jet Theory: Some Key Questions - *Mitch Begelman (Colorado, USA)*

Jets and their connection to the accretion flow - *Chris Done (Durham, UK)*

Numerical simulations of black hole jets - *Ramesh Narayan (Harvard CfA, USA)*

Comparing radio-loud Swift/BAT AGN with their radio-quiet counterparts - *Maitrayee Gupta (NCAC, Poland)*

Strong lensing reveals jets in a sub-microJy radio quiet quasar - *Philippa Hartley (SKAO, UK)*

Effects of Numerical Resolution and Disc Tilt on Jet Properties - *Chris White (California, USA)*

VLBI studies on AGN jets - *Keiichi Asada (ASIAA, Taiwan)*

Synthetic VLBI Imaging of Relativistic Jet Simulations: Applying Polarized Radiative Transfer Through 3D RMHD and 3D PIC Jet Calculations - *Nicholas MacDonald (MPIfR, Germany)*

A mechanism for triple-ridge emission structure of AGN jets - *Taiki Ogihara (Tohoku, Japan)*

Modelling relativistic jets via evolutionary algorithms - *Christian Fromm (Goethe, Germany)*

Powerful blazar jets dissipate their kinetic power to radiation from a single location: the molecular torus - *Adam Harvey (University of Maryland, Baltimore County, USA)*

Resolving the Enigma: Half a Century of VLBI Studies of Relativistic Jets - *Andrei Lobanov (MPIfR, Germany)*

Day 2: Wednesday 24th July

Lessons Learned from M87 - Jet collimation break as a new unification in AGN jets - *Masanori Nakamura (ASIAA, Taiwan)*

Probing signature of black hole spin in M87 shadow in flaring state - *Tomohisa Kawashima (NAO, Japan)*

Long-term, deep millimeter VLBI observations of M87 down to 7Rs and larger spatial scales - *Jae-Young Kim (MPIfR, Germany)*

Internal structure of relativistic jets - *Vasily Beskin (LPI & MPIT, Russia)*

The Overall B Field Configuration of AGN Jets - *Denise Gabuzda (Cork, Ireland)*

Hot, Pair Dominated Relativistic Jets - Marek Sikora (NCAC, Poland)

Numerical simulation of the polarization produced by recollimation shocks in jets with an initially disordered magnetic field - Christopher Kaye (UCLan, UK)

Are BL Lac jets weakly magnetised? - Emanuele Sobacchi (Negev, Israel)

Optical AGN jets at milliarcsecond scales - Leonid Petrov (NASA GSFC, USA)

Coupling between the small and large scale magnetic field configuration in the relativistic jet of OJ 287 - Ioannis Myserlis (MPIfR, Germany)

Particle acceleration at shocks in astrophysical jets - James Matthews (Oxford, UK)

Plasmoid reconnection as a mechanism for rapid radiation flares from relativistic jets - Krzysztof Nalewajko (NCAC, Poland)

The Feasibility of Magnetic Reconnection Powered Blazar Flares - Paul Morris (Oxford, UK)

High-energy neutrinos from AGN? - Sara Buson (Wuerzburg, Germany)

The First Radio Polarization Measurement of a Gamma-ray Burst Jet - Tanmoy Laskar (Bath, UK)

TeV Gamma-rays from jets - Jim Hinton (MPI-Heidelberg, Germany)

Highlights from the VERITAS AGN Observation Program - John Quinn (Dublin, Ireland)

Lepto-hadronic Blazar Modelling - Bruno Jiménez Fernandez (Bath, UK)

Day 3: Thursday 25th July

The importance of resolved X-ray data for understanding extragalactic radio jets - Diana Worrall (Bristol, UK)

Proper Motions from Radio to X-rays: New Results and Future Prospects - Eileen Meyer (UMBC, USA)

The remarkable survivability of AGN jets - Serguei Komissarov (Leeds, UK)

Large-scale jets: observations - Robert Laing (SKAO, UK)

Revisiting the Fanaroff-Riley dichotomy with the LOFAR Two-Metre Sky Survey (LoTSS) - Beatriz Mingo (Open University, UK)

Unveiling the cause of hybrid morphology radio sources (HyMoRS) - Jeremy Harwood (Hertfordshire, UK)

Jet propagation: energy dissipation and the FRI/FRII dichotomy - Manel Perucho (Valencia, Spain)

The multi-band properties of FR0 radio galaxies - Ranieri Diego Baldi (Southampton, UK)

Numerical simulations of colliding jets in an external wind: Application to 3C 75 - Gibwa Musoke (Radboud, Netherlands)

Jet-environment interaction as diagnostic of the central engine - Martin Krause (Hertfordshire, UK)

50 years of Microquasar Jets - Ralph Spencer (Manchester, UK)

Microquasar Jets - Felix Mirabel (IAFE-CONICET-UBA, Argentina)

Feedback from relativistic jets in evolving galaxies - Geoff Bicknell (ANU, Australia)

Is gas outflowing in a direction perpendicular to radio jets? - Davide Lena (SRON & Radboud University, Netherlands)

A systematic multi-phase study of galactic feedback by jets in quasars - Miranda Jarvis (ESO, Germany)

Varieties of interactions between radio galaxies and the intergalactic medium - Mark Birkinshaw (Bristol, UK)

Day 4: Friday 26th July

Radio jets as driving mechanism of gas outflows - Raffaella Morganti (ASTRON, Netherlands)

The impact of relativistic jets on the ISM of the host galaxies during the breakout phase - Clive Tadhunter (Sheffield, UK)

Jet-driven bubbles in Fanaroff-Riley type I sources - Christopher Irwin (Tel Aviv, Israel)

Radio source lifecycles from the LoTSS survey - Martin Hardcastle (Hertfordshire, UK)

Energetics and duty cycles of radio galaxies: insights from models - Stas Shabala (Tasmania, Australia)

Probing radio restarting activity and duty cycle in high-energy selected giant radio galaxies -

Gabriele Bruni (INAF, Italy)

The LOFAR Two-Metre Sky Survey view of radio-AGN in the local Universe: The most massive galaxies are always switched on -

Jose Sabater Montes (Edinburgh, UK)

Numerical modelling of Mpc scale jets - Dynamics and Energetics -

Joydeep Bagchi (IUCAA, India)

Jet production efficiency in the youngest radio galaxies -

Anna Wójtowicz (Jagiellonian, Poland)

Giant radio galaxies as ideal laboratories to study megaparsec jets -

Pratik Dabhade (IUCAA, India)

Summary + Discussions on future perspectives on jets -

Annalisa Celotti (SISSA, Italy)