

Galactic Nuclei in the Cosmological context 2024



GNC 2024
Galactic nuclei in the cosmological context

June 3rd-6th, 2024 - Szczecin, Poland

MUNI
FACULTY
OF SCIENCE

UNIWERSYTET SZCZECIŃSKI
SZKOŁA DOKTORSKA

MORSKIE CENTRUM
NAUKI

UNIWERSYTET
SZCZECIŃSKI



<https://gnc2024.physics.muni.cz/>



Summary of GNC24 meeting and closing remarks

Michal Zajaček

Faculty of Science, Masaryk University

GNC 2024 meeting

June 6th, 2024

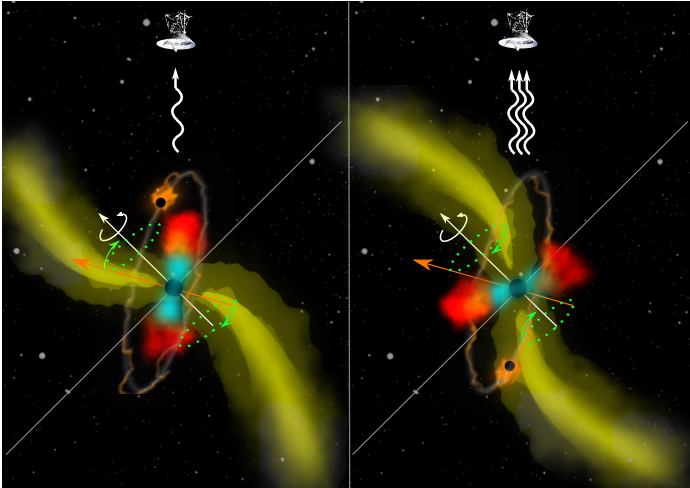
Some take-away ideas

What we need in the next 5-10 years

- significantly larger statistics of reverberation-mapped sources (LSST should significantly contribute)
- it should help to better constrain $R - L$ relation parameters \rightarrow cosmology using $H\alpha$, $H\beta$, MgII, and CIV $R - L$ relations
- cadence and sensitivity is important (should be rather regular for AGN); otherwise it can lead to systematic problems
- multiwavelength, high-cadence monitoring of transient sources (after TDE; AT2020ocn: LT precession? \rightarrow spin) and jetted sources (stochastic vs. deterministic behaviour; precession of jets)
- quasiperiodic X-ray sources \rightarrow candidates for EMRIs/IMRIs in anticipation of LISA (SMBH-IMBH candidates; ASASSN-20qc)

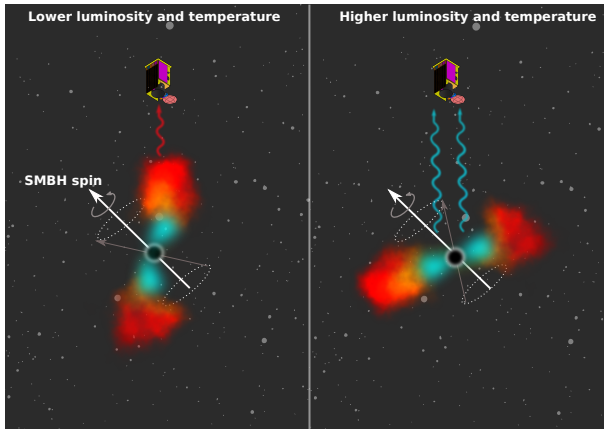
Example 1

Long-term jet precession (in radio VLBI) potentially reveals pairs of binary SMBHs (e.g. OJ287; Britzen et al. 2023)



Example 2

High-cadence X-ray monitoring of TDE sources can reveal Lense-Thirring precession of SMBHs \rightarrow spin distribution \rightarrow SMBH evolution (e.g. AT2020ocn; Pasham et al. 2024)



Participants

- everyone should have received a certificate of attendance
- we will put pdf files on the website (some are there) and create NASA ADS entries (if the ADS did not change policies ...)
- I will prepare a short meeting report and share it with session chairs → potential publish it in a suitable journal (Nature Astronomy?)

Workshop photo 1



Workshop photo 2



Workshop photo 3



Some enjoyable moments



Some enjoyable moments



Some enjoyable moments



Discussion around round table



Acknowledgements



Acknowledgements - LOC members



Acknowledgements - especially to Michal Rozenberg



What's next?



...event horizons



17th Marcel Grossmann meeting

July 7-12, 2024

2 Splinter Sessions

Repeating transients in galactic nuclei: confronting observations with theory

MA3

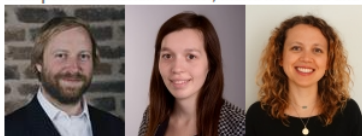
Chairpersons: Francesco Tombesi and Petra Sukova



Latest results from Galactic center observations

HP2

Chairpersons: Florian Peißker, Maria Melamed and Anna Ciurlo



Galactic and Extragalactic X-ray transients



Image credit: chadika.harvard.edu

Galactic and Extragalactic X-ray Transients

Theory and observational perspectives

Key topics:

1. Quasi periodic eruptions in accreting black holes
2. Tidal disruption events
3. Changing activity of supermassive black holes
4. First variability of Galactic X-ray sources
5. Accretion instabilities and gravitational waves from black hole and neutron star binaries
6. Testing General Relativity with supermassive black holes

Warsaw, Poland, September 9 - 11, 2024

<https://cl-agn.cft.edu.pl>

Abstract submission deadline: May 1 st

SOC

Bazena Czerny	(CFT PAN) - Co-Chair
Agnieszka Janiak	(CFT PAN) - Co-Chair
Szymon Kozłowski	(University of Warsaw)
Vladimir Karas	(Astronomical Institute, Prague)
Mikołaj Korzyński	(CFT PAN)
Alex Markowitz	(CAMK PAN, Warsaw)
Benny Trakhtenzon	(Tel Aviv University)
Michał Zająček	(Masaryk University, Brno)

LOC

Gerardo Urrutia	(CFT PAN)
Ashwari Pandey	(CFT PAN)
Raj Prince	(CFT PAN)

NAWA POLISH NATIONAL AGENCY FOR ACADEMIC EXCHANGE



Galaxies at Crossroads

GALAXIES AT CROSSROADS
**OUTFLOWS AND IMF IN THE
VLT/ELT/ALMA/JWST ERA**

BRNO, CZECHIA
16-20.09.2024

SOC
Alicia Casas (co-chair)
Tereza Jerabkova (co-chair)
Belen Alcalde
Lucia Armillotta
Andrea Bolamperti
Pavel Jachym
Ivanna Langan
Filippa Mannucci
Ivo Saviane
Domatilla Romano
Glenn Van de Ven
Norbert Werner

FEATURED SPEAKERS
Alina Boecker
Michele Cirasuolo
Natascha Foerster Schreiber
Fillipo Fraternali
Michaela Hirschmann
Andrew Hopkins
Pavel Jachym
Vincenzo Mainieri
Ignacio Martin-Navarro
Sergio Martin-Alvarez
Alice Strom
Zhiqiang Yan
Francesca Primas

+ speaker highlights based on submitted abstracts!

**Session on innovations in
Observational Astronomy!**

DEI & mentoring activities!

Dedicated time for discussions!

   <https://www.eso.org/sci/meetings/2024/galcross.html>



Galactic Center Workshop 2026/2027 in Brno

Letter of Intent for IAU Symposium in prep.



Galactic Nuclei in the Cosmological context 2024



GNC 2024
Galactic nuclei in the cosmological context

June 3rd-6th, 2024 - Szczecin, Poland

MUNI
FACULTY
OF SCIENCE

UNIWERSYTET SZCZECIŃSKI
SZKOŁA DOKTORSKA

MORSKIE CENTRUM
NAUKI

UNIWERSYTET
SZCZECIŃSKI



<https://gnc2024.physics.muni.cz/>

**MASARYK
UNIVERSITY**