

Special Issue

Mechanisms Behind Black Holes and Relativistic Jets

Message from the Guest Editor

Black holes are perhaps the most fascinating objects in the Universe. They can power thin beams of plasma, called jets, that extend into space, propagating with velocities close to the speed of light. Such relativistic jets are associated with supermassive black holes at the center of active galaxies, gamma-ray bursts, and some X-ray binaries. To discover what the mechanisms at work are around such black holes—from the accretion processes to the formation of jets—and how relativistic jets propagate through intergalactic or interstellar medium, how they are collimated, and how the observed radiation is produced, theoretical models and numerical simulations have been developed. The results obtained can thus be compared with observational data. For this Special Issue, we welcome scientific contributions on mechanisms that are relevant for improving our understanding of black holes and relativistic jets.

Guest Editor

Dr. Ioana Dutan

Institute of Space Science—INFLPR Subsidiary, 077125 Magurele, Romania

Deadline for manuscript submissions

15 December 2025



Universe

an Open Access Journal
by MDPI

Impact Factor 2.6
CiteScore 5.2



mdpi.com/si/237055

Universe
Editorial Office
MDPI, Grosspeteranlage 5
4052 Basel, Switzerland
Tel: +41 61 683 77 34
universe@mdpi.com

mdpi.com/journal/

universe





Universe

an Open Access Journal
by MDPI

Impact Factor 2.6
CiteScore 5.2



[mdpi.com/journal/
universe](https://mdpi.com/journal/universe)



About the Journal

Message from the Editor-in-Chief

The multidisciplinary journal *Universe* is aiming to follow and, hopefully, to lead to the largest extent as possible the ever-self renovating threads which weave mathematical theories with our understanding of the magnificent natural world. On behalf of all the distinguished members of the Advisory and Editorial Boards, I extend my welcome to this journal and look forward to hearing from the interested contributors and learning about their valuable research.

Editor-in-Chief

Prof. Dr. Lorenzo Iorio
Ministero dell' Istruzione e del Merito, Viale Unità di Italia 68, 70125 Bari,
Italy

Author Benefits

Open Access:

free for readers, with article processing charges (APC) paid by authors or their institutions.

High Visibility:

indexed within Scopus, SCIE (Web of Science), Astrophysics Data System, INSPIRE, CAPlus / SciFinder, Inspec, and other databases.

Journal Rank:

JCR - Q2 (Astronomy and Astrophysics) / CiteScore - Q2 (General Physics and Astronomy)