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Press release

Max-Planck-Institut für Radioastronomie

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Contests / awards, Personnel announcements
Physics / astronomy
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ERC advanced grant for Prof. Dr. Yuri Kovalev

The European Research Council (ERC) has awarded Prof. Dr. Yuri Kovalev, scientist at the Max Planck Institute for Radio Astronomy in Bonn, Germany, a highly prestigious and competitive Advanced Grant of approximately 2.8 million Euros under the Horizon Europe funding programme. The grant will empower him and his team to unveil ground-breaking insights into the most energetic phenomena in the cosmos through the project "Multi-messenger Studies of Extragalactic Super-colliders (MuSES)".

"The golden age of multimessenger astrophysics is beginning," says Yuri Kovalev, scientist at the Max Planck Institute for Radio Astronomy (MPIfR). "High-energy neutrinos are arriving from deep space, providing information about those mysterious machines in the universe that can accelerate massive protons almost to the speed of light." For instance, the European KM3NeT facility in the Mediterranean Sea is rapidly being developed which will double the amount of neutrino data currently collected by the American-led IceCube neutrino observatory.

"We have found early evidence that active galaxies with relativistic jets could be these cosmic super-colliders. In the project, we will study these objects with extremely high angular resolution to see directly what happens in galactic nuclei during neutrino flares," adds Yuri Kovalev.

The research group to be formed by Professor Kovalev in MPIfR within the advanced ERC grant will utilize the sharpest available radio images in astronomy to directly image the sources of neutrino emission. This is done using the so-called very long baseline interferometry (VLBI) technique. This is currently the best tool astronomers have for studying galaxies and sub-parsec scales at distances of billions of light years.

He concludes: "This project will allow us to understand how energy is extracted from galactic nuclei and what mechanism is responsible for the production of cosmic rays."

Professor Anton Zensus, Director at MPIfR and Head of its Radio Astronomy/VLBI research department, is excited about the prospects for scientific collaboration within his team: "This prestigious ERC grant to Professor Kovalev for his MuSES project, will enable him to continue his world class astronomical research on violently active central regions of galaxies in the Universe. This project will perfectly complement my M2FINDERS initiative, also funded by the ERC, and together we expect to make major progress in designing advanced methods and experiments towards better understanding of these fascinating objects in the universe, such as the center of our own galaxy, the Milky Way."

Additional Information

The European Research Council (ERC) has announced the names of 255 outstanding research leaders in Europe set to be awarded ERC Advanced Grants. The funding is amongst the EU's most prestigious and competitive, providing leading

senior researchers with the opportunity to pursue ambitious, curiosity-driven projects that could lead to major scientific breakthroughs. The new grants, worth in total nearly €652 million, are part of the EU's Horizon Europe programme.

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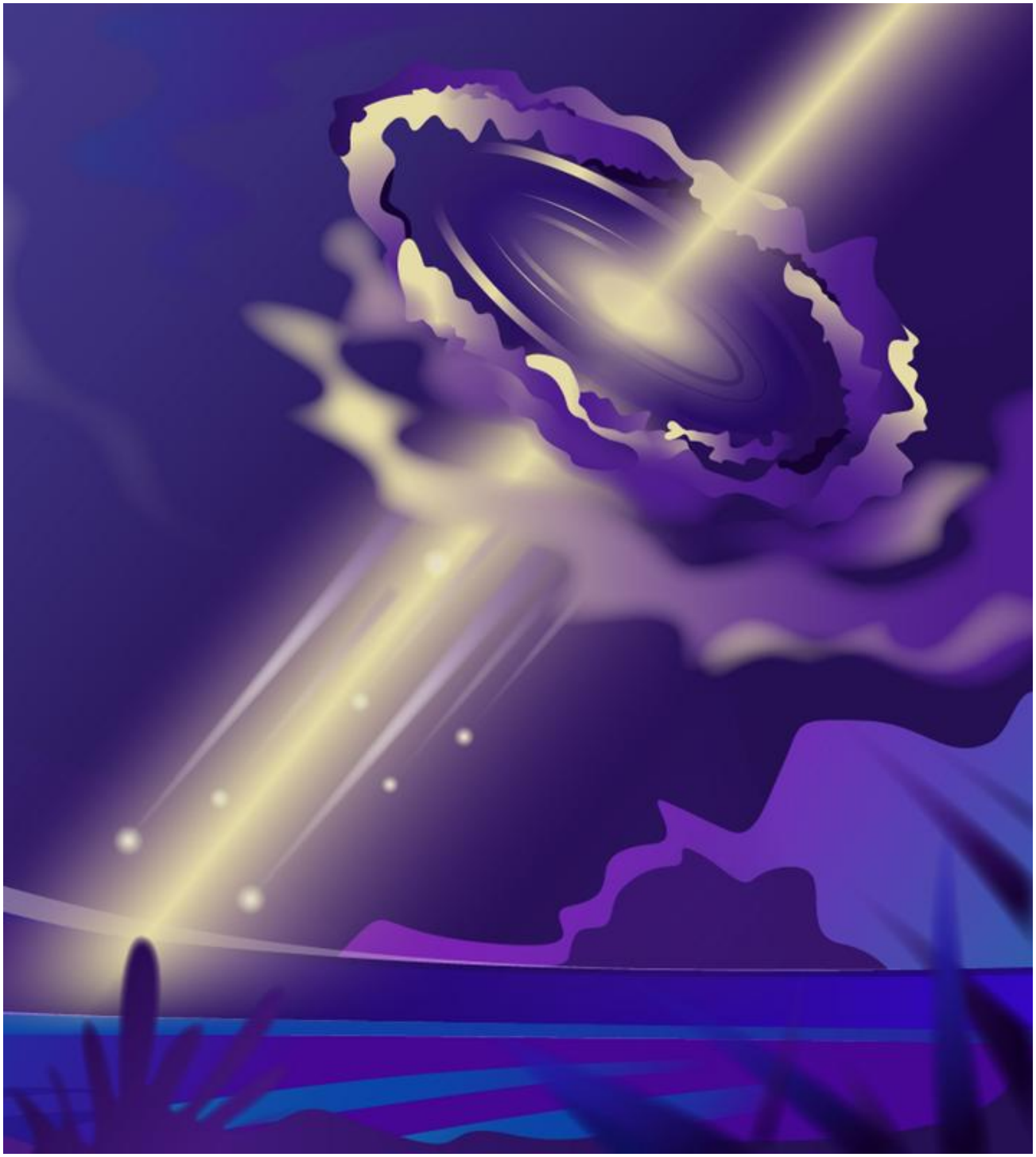

Artist’s impression of a distant active galaxy with a black hole and an accretion disk that accelerate particles to extremely high energies. They produce a very bright plasma jet visible from radio to gamma rays, and emit high-energy neutrinos.
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Prof. Dr. Yuri Kovalev, awarded with the European Research Council Advanced Grant MuSES.
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