

PRESS RELEASE

Paris-Saclay, 4 June 2021

Jean-Michel Bismut, Emeritus Professor at the Orsay Mathematics Laboratory, is awarded the 2021 Shaw Prize

The 2021 Shaw Prize in Mathematical Sciences has been awarded to Jean-Michel Bismut, Emeritus Professor at Université Paris-Saclay and researcher at the Orsay Mathematics Laboratory (Université Paris-Saclay/CNRS). He shares the prize with Jeff Cheeger, Professor of Mathematics at New York University. They have been awarded the prize for their remarkable insights that have transformed, and continue to transform modern geometry.

Jean-Michel Bismut is an Emeritus Professor at the Mathematics Department at the Orsay Faculty of Sciences and a researcher at the Orsay Mathematics Laboratory (Université Paris-Saclay/CNRS). His work has spanned the entire field of mathematics, illustrated by his most recent work, which combines probability, analysis, algebra and arithmetic, and is characterised by his own personal touch of great technical skill and vision.

At the start of his career, Jean-Michel Bismut made profound contributions to probability theory that have had a major impact on the theory of mathematical finance. He later applied his ideas on probability to index theory, reproving all of the field's main theorems and vastly extending them, which enabled him to link index theory to other parts of mathematics.

Jean-Michel Bismut's work has led to many applications in a wide range of fields, including number theory in mathematics, and also in physics. In recent years, his work has helped to change the way we think about the Selberg trace formula, a fundamental tool in representation theory and modern number theory.

Jean-Michel Bismut and Jeff Cheeger have also worked alongside each other. Together, they have solved long-standing open problems, introduced new ideas and built tools that have greatly extended the range of what is possible in modern geometry, and as a result have transformed the subject.

The Shaw Prize, which is sometimes referred to as the "Nobel Prize of the East", consists of a series of annual scientific awards, which were first presented in 2004 by the Shaw Foundation. Laureates are awarded a sum of US\$1.2 million, thanks to the philanthropic donation made by Run Run Shaw, the Hong Kong media mogul, who founded the prize and the foundation. The prize recognises scientists in the fields of Astronomy, Life Science & Medicine, and Mathematical Sciences. The 2021 prizes will be presented in Hong Kong at a date that is set to be confirmed due to the current health crisis.

This prestigious prize is an immense honour for Professor Jean-Michel Bismut and acts as a demonstration of the research excellence in mathematics at the CNRS and at Université-Paris-Saclay. The University was ranked 1st in the world in the 2021 edition of the Shanghai Ranking's Global Ranking of Academic Subjects for Mathematics on 26 May 2021.

ABOUT UNIVERSITÉ PARIS-SACLAY

Université Paris-Saclay brings together ten constituent faculties and institutes, four Grandes Écoles, the Institut des Hautes Etudes Scientifiques, two associate institutions and shared laboratories with six national research organisations.

With 48,000 students, 8,100 lecturers and 8,500 administrative and technical staff members, Université Paris-Saclay offers a comprehensive and varied range of undergraduate to doctorate level programmes and engineering degrees, renowned for their quality thanks to the reputation and commitment of the University's academic staff.

Located in the south of Paris on vast sites that stretch across Paris, Orsay, Évry and Versailles, Université Paris-Saclay benefits from a strategic geographical and socio-economic position that is strengthened by its international visibility. A leading University, Université Paris-Saclay is recognised for its excellent Mathematics and Physics programmes but also for Biological and Medical Sciences, Agriculture, Engineering, and its extensive Humanities and Social Sciences courses. Close to Paris, Université Paris-Saclay is nestled in a protected natural area, at the heart of a dynamic economic hub.



Press contacts:

Katie O'Dowdall
katie.odowdall@universite-paris-saclay.fr

The Press Team
service.presse@universite-paris-saclay.fr

ABOUT THE CNRS

The French National Center for Scientific Research is one of the most recognized and renowned public research institutions in the world. For more than 80 years, it has continued to attract talent at the highest level and to nurture multi-disciplinary and interdisciplinary research projects at the national, European and international levels. Geared towards the public interest, it contributes to the scientific, economic, social and cultural progress of France.

The CNRS is above all 32,000 women and men, more than 1,000 laboratories in partnership with universities and other higher education institutions bringing together more than 120,000 employees and 200 professions that advance knowledge by exploring the living world, matter, the Universe, and the functioning of human societies. The CNRS ensures that this mission is carried out in compliance with ethical rules and with a commitment to professional equality. The close relationship it establishes between its research missions and the transfer of acquired knowledge to the public makes it today a key player in innovation in France and around the world. Partnerships with companies are at the heart of its technology transfer policy, and the start-ups that have emerged from CNRS laboratories bear witness to the economic potential of its research. The CNRS provides also access to research findings and data, and this sharing of knowledge targets many audiences: scientific communities, the media, decision-makers, economic players and the general public.

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