



Press release – 16 October 2019

**Two IHES researchers
awarded prizes by the French Academy of Sciences**

The Institut des Hautes Études Scientifiques (IHES) congratulates Slava Rychkov, permanent professor, winner of the Mergier-Bourdeix Grand Prize and Bertrand Eynard, CEA researcher at the IHES, winner of the Claude Berthault Prize.



Slava Rychkov is a particle theorist. After studying mathematics at the Moscow Institute of Physics and Technology, and a PhD at Princeton (under the supervision of Alexander Polyakov), he worked in Pisa, then at CERN. He became a professor at UPMC, then at ENS-Paris and joined IHES as permanent professor in 2017.

His work focused first on possible extensions of the standard model that could have experimental implications, such as supersymmetry, composite Higgs boson models, or the production of black holes in a high-energy collision. For several years now, he has also started a school all over the world that studies the quantitative consequences of conformant invariance in a relativistic field theory. Using crossover symmetry and positivity inequalities related to unity, he obtained bounds on the anomalous dimensions of extraordinarily precise fields. Thus, in dimension three, he obtained the critical exponents of famous models such as the Ising model with greater precision than any previous method. This method known as “conformal bootstrap” has revolutionized contemporary theoretical physics.



Bertrand Eynard is a theoretical physicist. After a PhD on random matrices (under the supervision of Jean Zinn-Justin), he became a researcher at the CEA (French Alternative Energies and Atomic Energy Commission) in 1995. Still affiliated to CEA, he has been working at IHES since September 2018.

His work began with random matrices where he made important contributions and wrote and taught several courses. In 2004, he introduced a new algebraic method for calculating the asymptotic development of large random matrices, called “topological recurrence”. This method has been very successful because it has proved to be much more general than random matrices: it appears in many fields of mathematical physics, such as enumerative geometry, Gromov-Witten invariants, node theory, string theory and integrable systems. Topological recurrence has become a mathematical subject in its own right, taught in master's degrees and the subject of several annual conferences. Together with M. Kontsevich, B. Eynard was the 2019 winner of the European ERC Synergy Fellowship for the ReNewQuantum project, focusing on the study of topological recurrence.

The Mergier-Bourdeix Grand Prize

A biennial prize awarded alternately in the Division of Mathematical and Physical Sciences, Universe Sciences and their Applications (this is the case in 2019) and in the Division of Chemical, Biological and Medical Sciences and their Applications, to a young French researcher engaged in fundamental research on a non-profit, non-profit basis, with no immediate application and whose results reveal exceptional talents.

The Claude Berthault Prize

The income is allocated by the Institut de France, on proposals from the French Academy, the Academy of Sciences and the Academy of Moral and Political Sciences, either as an incentive to families of farmers or sailors along the Channel and Ocean coasts, or as a reward for artistic or scientific works that could enhance the reputation of the French nation.

The Institut des Hautes Études Scientifiques (IHES)

IHES is a private research institute dedicated to mathematics, theoretical physics and all related disciplines. The Institute has a limited number of permanent professors, mathematicians and theoretical physicists, and welcomes about 200 visiting professors per year from all over the world for research visits.

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