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Curriculum vitae

2018 Fields Medallist Professor Alessio Figalli



Alessio Figalli. (Photo: © ETH Zürich / Gian Marco Castelberg)

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Alessio Figalli has been full professor of mathematics at ETH Zurich since September 2016, prior to which he held various professorships in Europe and the USA. The multi-award-winning 34-year-old is regarded as an original and creative “problem solver”.

Alessio Figalli was born in Rome, Italy in 1984. He is married and lives in Zurich. In October 2006 he received his Master’s degree *cum laude* in mathematics from the Scuola Normale Superiore di Pisa, Italy, an institution renowned as a scientific talent factory forging an independent and original tradition of mathematics. His thesis on optimal transport in October 2007 saw him obtain his doctorate *cum laude*. His supervisors were Luigi Ambrosio at the

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Scuola Normale Superiore di Pisa, and 2010 Fields Medallist Cédric Villani at the École Normale Supérieure de Lyon. Both rank amongst the most innovative researchers in optimal transport theory and related topics.

Before coming to Zurich in September 2016, Alessio Figalli held a number of professorships in France and the USA: from October 2007 to September 2008 he was Chargé de recherche CNRS (comparable to a tenure track assistant professorship) at the University of Nice, France. October 2008 saw him move to the École Polytechnique in Palaiseau, France where he was appointed Hadamard Professor, a post created to foster promising mathematical talent. In 2009 he moved to the University of Texas in Austin, a world-class institution in the field of analysis where, from September 2009 to August 2011, he was associate professor and, from September 2011 to August 2016, full professor. In July 2015, the ETH Board and ETH President Lino Guzzella appointed him full professor of mathematics at ETH Zurich.

Alessio Figalli's research focuses on questions of optimal transport and calculus of variations in connection with partial differential equations, such as the Monge-Ampère equation, and probability theory (random matrices). He investigates the optimal transport theory in connection with minimum energy states. In his quest to solve fundamental problems, his findings and proofs are characterised by exceptional originality and elegance. They are important for mathematics and other sciences, in that they concern, for instance, the mathematical description of changes in the shape of soap bubbles and crystals (the isoperimetric problem) or cloud formations (the semi-geostrophic problem). Alessio Figalli is also researching new solutions for the description of elastic membranes constrained to lie above an obstacle (the obstacle problem) and phase transitions, such as those from ice to water (the Stefan problem). In December 2016 he received an ERC Consolidator Grant, which is regarded as a hallmark of quality for top-flight European research, to tackle fundamental problems in the field of partial differential equations.

Awards and distinctions

2018 – Fields Medal – an international distinction recognising outstanding mathematical achievement

2017 – Feltrinelli Prize from the Accademia Nazionale dei Lincei

Since 2017 – Member of the European Academy of Sciences

2016 – O'Donnell Award in Science from The Academy of Medicine, Engineering & Science of Texas

2015 – Stampacchia Gold Medal

2014 – Invited speaker at the International Congress of Mathematicians

2012 – EMS Prize awarded by the European Mathematical Society

2011 – Peccot-Vimont Prize from the Collège de France

Alessio Figalli is the author of 149-plus publications in important scientific journals and sits on the advisory or editorial boards of ten such journals.