

## **IMU-Net 90b: August 1, 2018**

### **Special issue on IMU Prizes and Medals at the ICM 2018 in Rio**

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The highest point of the International Congress of Mathematicians is the announcement of prize winners at the opening ceremony. This just occurred on August 1, 2018 in Rio de Janeiro, Brazil, where the Brazilian Minister of Education, Rossieli Soares da Silva, presented the IMU awards (a medal and a cheque for each of the prize winners): the Fields Medals, the Rolf Nevanlinna Prize, the Carl Friedrich Gauss Prize, the Chern Medal, and the Leelavati Prize. The 2018 prize winners are:

**FIELDS MEDALS** (recognizing outstanding mathematical achievement; recipients are listed in alphabetical order of last names):

- Caucher Birkar (University of Cambridge, UK) for the proof of the boundedness of Fano varieties and for contributions to the minimal model program
- Alessio Figalli (ETH Zurich, Switzerland) for contributions to the theory of optimal transport and its applications in partial differential equations, metric geometry and probability
- Peter Scholze (Bonn University, Germany) for transforming arithmetic algebraic geometry over  $p$ -adic fields through his introduction of perfectoid spaces, with application to Galois representations, and for the development of new cohomology theories
- Akshay Venkatesh (IAS Princeton, US) for his synthesis of analytic number theory, homogeneous dynamics, topology, and representation theory, which has resolved long-standing problems in areas such as the equidistribution of arithmetic objects

**ROLF NEVANLINNA PRIZE** (honoring distinguished achievements in mathematical aspects of information science):

- Constantinos Daskalakis (MIT, US) for transforming our understanding of the computational complexity of fundamental problems in markets, auctions, equilibria, and other economic structures. His work provides both efficient algorithms and limits on what can be performed efficiently in these domains.

**CARL FRIEDRICH GAUSS PRIZE** (for outstanding mathematical contributions with significant impact outside of mathematics):

- David L. Donoho (Stanford University, US) for his fundamental contributions to the mathematical, statistical and computational analysis of important problems in signal processing.

**CHERN MEDAL** (awarded to an individual whose accomplishments warrant the highest level of recognition for outstanding achievements in the field of mathematics):

- Masaki Kashiwara (Kyoto University, Japan) for his outstanding and foundational contributions to algebraic analysis and representation theory sustained over a period of almost 50 years.

**LEELAVATI PRIZE**, sponsored by Infosys (for outstanding contributions to public outreach in mathematics by an individual):

- Ali Nesin (Istanbul Bilgi University, Turkey) for his outstanding contributions towards increasing public awareness of mathematics in Turkey, in particular for his tireless work in creating the "Mathematical Village" as an exceptional, peaceful place for education, research and the exploration of mathematics for anyone.

The ICM hosts the **ICM EMMY NOETHER LECTURE**. The 2018 lecturer is Sun-Yung Alice Chang (Princeton University, US). She will speak on Conformal Geometry on 4-manifolds.

More details on the prizes including the citations and work profiles of the prize winners can be found at <https://www.mathunion.org/imu-awards/fields-medal/fields-medals-2018>. Details about the IMU awards and also the physical medals and the cash awards can be found [here](#).

The award ceremony was livestreamed and is available at <https://www.youtube.com/watch?v=Webvi7vxUCk>.

IMU and the international mathematical community congratulate the winners!

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