



Paul Ehrenfest Best Paper Award for Quantum Foundations 2018

ICFO researchers receive best paper award for Almost Quantum Correlations

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The Paul Ehrenfest Best Paper Award for Quantum Foundations, given by the Institute for Quantum Optics and Quantum Information in Austria, recognizes outstanding and influential research contributions to the foundations of quantum physics, aiming to raise awareness on the relevance of the field of quantum foundations in modern research, and to draw attention to new and interesting achievements in the field. The prize is awarded to the most significant paper in foundations of quantum physics, theoretical or experimental, published in a peer-review journal in the five calendar years prior to the prize call (i.e., this year between January 1st, 2014 and December 31st 2018). Papers from all areas in the foundations of quantum physics, and by authors of any background, are eligible for the award.

Researchers Miguel Navascues, Yelena Guryanova, Matty J. Hoban and ICREA Prof. at ICFO Antonio Acin have been named recipients of the 2018 award for their paper titled **Almost**

Quantum Correlations, published in Nature Communications. The paper defines a set of correlations, dubbed 'almost quantum', and proves that it strictly contains the set of quantum correlations but satisfies all-but-one of the proposed principles to capture quantum correlations. The paper presents numerical evidence that the remaining principle is satisfied as well.

The 2018 selection committee has awarded the prize to Navascues et al. for the theoretical discovery of a natural set of stronger-than-quantum correlations, which challenges correlations-based approaches to characterizing quantum theory and hints at potential beyond-quantum physics.

The researcher group led by Prof. Acin was also the recipient of the 2016 Paul Ehrenfest Best Paper Award, making this the second time that the group has been recognized for the significance of its contributions in the area of the foundations of quantum physics.

Congratulations!

