

# The Eighth Vasil A. Popov Prize

awarded to

# Jean-Marie Mirebeau

## CNRS, Université Paris-Sud, France

15th International Conference in Approximation Theory  
San Antonio, Texas  
May 23, 2016



Jean-Marie Mirebeau holds a research position at the CNRS, Université Paris-Sud, France. He received his PhD in December 2010, from the Laboratoire Jacques-Louis Lions, Université Pierre et Marie Curie, under the supervision of Albert Cohen.

The Eighth Vasil A. Popov Prize was awarded to Jean-Marie Mirebeau of France, on May 23, 2016, at the 15th International Conference in Approximation Theory held in San Antonio, Texas.

Jean-Marie Mirebeau was recognized for his outstanding contributions to the development and analysis of nonlinear and adaptive approximation methods that account for local anisotropic features. In particular, he has identified the algebraic structures that lead to the characterization of the optimal aspect ratio of simplices in finite element approximation, revealing among others the role played by the beautiful Hilbert invariant polynomial theory. His work also shed light on the properties of Riemann metrics that should be prescribed in mesh generation algorithms for optimizing the compromise between complexity and accuracy measured in various relevant norms. Motivated by image processing applications, Mirebeau developed powerful discretization techniques that allow to properly treat anisotropy in partial differential equations when a regular square grid is imposed. A critical role in these developments is played by Laguerre Voronoi diagrams and reduced lattice bases.

The Prize, which consists of a marble pyramid trophy and a cash award of \$2000, was presented to Mirebeau by Pencho Petrushev of the University of South Carolina, Chair of the Popov Prize Selection Committee. The other members of the Selection Committee were Wolfgang Dahmen, Arno Kuijlaars, Paul Nevai, Peter Oswald, and Edward Saff. After the Prize awarding ceremony, Mirebeau gave a lecture at the Conference entitled "Adaptive and Anisotropic Approximation Tools and Techniques".

<http://imi.cas.sc.edu/popov-prize-winner/>

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