Second Laureate
Applied Research

- **Research Work Title:** Lipschitz Global Optimization and Infinity Computing
- **Researcher:** Prof. Yaroslav D. Sergeyev
- **Country:** Italy/ Russia
- **Field:** Mathematics and Computer Science
- **Scientific Affiliation:** University of Calabria, Rende (CS), Italy & Lobachevsky State University, Nizhni Novgorod, Russia

Abstract:

The work consists of interrelated parts: global optimization, numerical algorithms, and algorithms to work with infinities and infinitesimals numerically on new patented computers. It introduces efficient global optimization methods and a powerful computational platform in the Foundations of Mathematics and Computer Science. It shows how to express infinite and infinitesimal numbers and to include them in the practice of numerical computation, opening so new horizons in such fundamental areas as Theory of Computations, Numerical Analysis, Set Theory, and Philosophy of Mathematics. A number of powerful applications in these areas have been developed.

Biography:

Yaroslav D. Sergeyev, Ph.D., D.Sc., D.H.C. is Distinguished Professor and Head of Numerical Calculus Laboratory at the University of Calabria, Italy and Professor at Lobachevsky State University, Nizhni Novgorod, Russia. His research interests include numerical analysis, global optimization (he is Vice-President of the International Society of Global Optimization), infinity computing and calculus, philosophy of computations, set theory, number theory, and fractals. Prof. Sergeyev was awarded several research prizes (Pythagoras International Prize in Mathematics, Italy, 2010; EUROPT Fellow, 2016; Outstanding Achievement Award from the 2015 World Congress in Computer Science, Computer Engineering, and Applied Computing, USA; Lagrange Lecture, Turin University, Italy, 2010; etc.). His list of publications contains more than 200 items. He is a member of editorial boards of 6 international journals. He delivered more than 50 plenary and keynote lectures at prestigious international congresses. Software developed under his supervision is used in more than 40 countries of the world.