

**Ludmil Katzarkov** is a full professor at the University of Miami, the University of Vienna, and the Institute of Mathematics and Informatics at the Bulgarian Academy of Sciences. He is a Co-Director of the Institute of the Mathematical Sciences of the Americas (IMSA) and a Scientific Director of the International Center for Mathematical Sciences – Sofia (ICMS – Sofia).

Katzarkov is an algebraic geometer known for his fundamental contributions to the topological study of Kaehler spaces, Hodge theory, and mirror symmetry. Katzarkov introduced the non-abelian Hodge theory approach to Shafarevich's uniformization conjecture and proved this conjecture for smooth projective varieties with virtually nilpotent fundamental groups. Later together with Eyssidieux, Pantev and Ramachandran, Katzarkov proved the conjecture for smooth projective varieties with virtually linear fundamental groups. Katzarkov has also done important foundational work in symplectic topology – together with collaborators he constructed symplectic Lefschetz fibrations with arbitrary fundamental groups, and together with Auroux and Donaldson developed Lefschetz theory for symplectic manifolds. For several years Katzarkov has been a leader in the research on mirror symmetry. Together with Auroux and Orlov, Katzarkov proved the Homological Mirror Symmetry conjecture for a number of toric surfaces and their non-commutative deformations. Also in a series of papers with Kapustin, Orlov, Gross, and Ruddat, Katzarkov studied Homological Mirror Symmetry for manifolds of general type. Another major direction in Katzarkov's research is his work with Kontsevich and Pantev developing non-commutative geometry, non-commutative Hodge theory, and a non-commutative categorical approach to mirror symmetry.

Katzarkov has organized more than 30 conferences, schools, and workshops, and has mentored and attracted many young people to research in geometry, symplectic topology, and mirror symmetry.

#### **Research interests:**

- Algebraic Geometry
- Symplectic Geometry
- Mathematics of String Theory
- Homological Mirror Symmetry

#### **Honors & Acknowledgements:**

- Simons Investigator Award – 2017
- Simons Fellowship – 2014
- National Science Foundation CAREER Award – 2010
- ERC Advanced Grant – 2008
- Clay Research Fellow – 2005
- Sloan Research Fellow – 1998