

Rigorous computation of solutions to differential equations problems, and algorithmic complexity

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Abstract: This talk is devoted to the motivation and the overall picture of connecting computability and bit-complexity theories with real-valued analysis, such as guaranteed-precision solving of differential equations and related linear algebra problems. In particular, it contains a brief survey of joint works with V. Selivanov and their recent developments, as well as a discussion on algorithmic complexity classification of differential equations, compared to their other known classifications.