

# On optimality, stability, and exceptional sets of some randomized algorithms for ODEs

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The first part of the talk will be devoted to error bounds and optimality of randomized Euler and two-stage Runge-Kutta schemes under inexact information and mild assumptions about the right-hand side function (including local Hölder and Lipschitz continuity in time and space variables, respectively), cf. [3,4,6]. In the second part, based on [2,5], we will report properties of the exceptional set for some class of randomized algorithms in the setting of inexact information, including the schemes considered in the first part. Finally, we will discuss the probabilistic A-stability of randomized Taylor schemes. Results covered in the last part come from [1,3].

## References:

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- [6] R. Kruse, Y. Wu, Error analysis of randomized Runge-Kutta methods for differential equations with time-irregular coefficients, *Comput. Methods Appl. Math.* **17** (2017), 479–498.