

Topological decoupling and linearization of nonautonomous evolution equations

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Topological linearization results typically require solution flows rather than merely semi-flows. An exception occurs when the linearization fulfills spectral assumptions met e.g. for scalar reaction-diffusion equations. We employ tools from the geometric theory of nonautonomous dynamical systems in order to extend earlier work by Lu [1] to time-variant evolution equations under corresponding conditions on the Sacker-Sell spectrum of the linear part. Our abstract results are applied to nonautonomous reaction-diffusion and convection equations.

The talk is based on joint work with Evamaria Russ.

References

- [1] K. Lu. A Hartman-Grobman theorem for scalar reaction-diffusion equations. *J. Differ. Equations* **93**, 364–394, 1991
- [2] C. Pötzsche and E. Ruß. Topological decoupling and linearization of nonautonomous evolution equations. *Discrete Contin. Dyn. Syst. (Series S)* **9(4)**, 1235–1268, 2016