PERIODIC AUTOCONVOLUTION: PROPERTIES AND REGULARIZATION

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In the first part of this presentation, we consider some properties of the periodic autoconvolution operator. This includes monotonicity as well as mapping properties in Sobolev spaces of periodic functions. In addition, the optimality of regularization methods is investigated in a general framework. In a second part, recent results on a variational inequality formulation of Lavrentiev regularization for solving periodic autoconvolution equations are given. New convergence rates are presented which in fact is done in an abstract setting. Finally, the regularizing properties of a Galerkin scheme for solving periodic autoconvolution problems are considered.

References

[1] R. Plato, B. Hofmann, *A regularized variational inequality approach for nonlinear monotone ill-posed equations*, submitted for publication.