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## An adaptive scheme for a general class of semiiterative methods

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The presentation is devoted to a new wide class of methods for solving ill-posed problems. The proposed approach combines a general class of semiiterative methods that includes both standard  $\nu$ -methods as well as modified ones (see [1]), adaptive discretization schemes (see [2]) for the input data and the discrepancy principle as a stopping rule. The constructed approach has an optimal rate of convergence for solutions with a finite Sobolev-type smoothness. Due to an appropriate adaptive discretization scheme our methods use discrete information more efficiently in comparison with previous approaches and have no restriction on the smoothness of the exact solution.

- [1] W. Erb, Accelerated Landweber methods based on co-dilated orthogonal polynomials, arXiv:1206.1950 [math.NA], (2012).
- [2] S.G. Solodky, E.A. Volonets Adaptive scheme of discretization for one semi-iterative method in solving ill-posed problems *Ukr. Math. Vestnik* **7**, (2010), 553–569.