

Convergence properties of dynamic string averaging projection methods in the presence of perturbations

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Abstract

We study the convergence properties of iterative methods, defined by a sequence of nonexpansive mappings, in the presence of perturbations. Our main result states that for summable perturbations, the convergence rate can be essentially preserved.

Moreover, we show that for boundedly linearly regular families of sets, the dynamic string-averaging projection method converges linearly. By a combination of this convergence result with our results on perturbation resilience we show that under these assumptions, the perturbed dynamic string-averaging projection method converges linearly too.

This is joint work with Simeon Reich and Rafa Zalas.

References

- [1] C. Bargetz, S. Reich and R. Zalas: Convergence Properties of Dynamic String Averaging Projection Methods in the Presence of Perturbations. Numerical Algorithms. Online First (2017),

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