

Fejér* monotonicity in optimization algorithms

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Fejér monotonicity is a well-established property commonly observed in sequences generated by optimization algorithms. In this work, we introduce an extension of this property, called Fejér* monotonicity, which was initially proposed in [SIAM J. Optim., 34(3), 2535–2556 (2024)]. We discuss and build upon the concept by exploring its behavior within Hilbert spaces, presenting an illustrative example and insightful results regarding weak and strong convergence. We also compare Fejér* monotonicity with other weak notions of Fejér-like monotonicity, to better establish the role of Fejér* monotonicity in optimization algorithms.

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