

On the Łojasiewicz-Simon gradient inequality on submanifolds

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Since the pioneering work of L. Simon, the Łojasiewicz-Simon gradient inequality has been widely used as a powerful tool to analyze convergence properties of gradient flows.

The inequality was first proven for analytic functions in \mathbb{R}^d in [2] and extended to analytic functions on a Banach space in [3]. Very general sufficient conditions for the inequality to hold are presented in [1].

We extend the results of [1] to energies on certain submanifolds of Banach spaces. Our results apply to study convergence properties of a class of parabolic evolution equations with (nonlinear) constraints.

References

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