On the Łojasiewicz-Simon gradient inequality on submanifolds

Fabian Rupp\textsuperscript{1,*}

\textsuperscript{1}Institute of Analysis, Ulm University, Ulm, Germany

*Email: fabian.rupp@uni-ulm.de

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

