A second order dynamical system with variable damping associated to a nonconvex minimization

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Abstract

In this paper we study a second order dynamical system in connection with the minimization of a smooth nonconvex function. The convergence of the generated trajectory to a critical point of the objective is ensured provided a regularization of the objective function satisfies the Kurdyka-Lojasiewicz property. We also provide convergence rates for the trajectory formulated in terms of the Lojasiewicz exponent.