

On some gradient systems of expansive type governed by a quasiconvex function

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Abstract

We study the asymptotic behavior of solutions to a quasi-autonomous first-order gradient system of expansive type governed by a differentiable quasiconvex function with a Lipschitz continuous gradient, in continuous and discrete time. In particular, we show that the existence of bounded solutions to the system implies that the set of critical points of the quasiconvex function is nonempty. Some numerical examples are also given.