Mathematics > Dynamical Systems

A new Lax-Oleinik type semigroup for time-periodic positive definite Lagrangian systems

Kaizhi Wang, Jun Yan

(Submitted on 10 Nov 2010)

In this paper we introduce a new Lax-Oleinik type semigroup associated with positive definite Lagrangian systems for both the time-independent case and the time-periodic case. We show that the new Lax-Oleinik type semigroup can take the place of the Lax-Oleinik semigroup in the weak KAM theory. More than that, the new Lax-Oleinik type semigroup converges to a backward weak KAM solution faster than the Lax-Oleinik semigroup in the time-independent case, and the new Lax-Oleinik type semigroup converges to a backward weak KAM solution in the time-periodic case, while it is shown by Fathi and Mather that there is no such convergence of the Lax-Oleinik semigroup.

Subjects:	**Dynamical Systems (math.DS)**
MSC classes:	37J50
Cite as:	**arXiv:1011.2244v1 [math.DS]**

Submission history

From: Kaizhi Wang [view email]
[v1] Wed, 10 Nov 2010 00:49:38 GMT (22kb)

Which authors of this paper are endorsers?