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Stability for approximation methods of the one-dimensional Kobayashi-Warren-Carter system. (English) [Zbl 1340.35113](#)

Math. Bohem. 139, No. 2, 381-389 (2014).

Summary: A one-dimensional version of a gradient system, known as “Kobayashi-Warren-Carter system”, is considered. In view of the difficulty of the uniqueness, we here set our goal to ensure a “stability” which comes out in the approximation approaches to the solutions. Based on this, the Main Theorem concludes that there is an admissible range of approximation differences, and in the scope of this range, any approximation method leads to a uniform type of solutions having a certain common features. Further, this is specified by using the notion of “energy-dissipative solution”, proposed in a relevant previous work.

MSC:

[35K40](#) Second-order parabolic systems

[35B35](#) Stability in context of PDEs

Cited in **4** Documents

Keywords:

approximation method; stability; energy-dissipative solution

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