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Modelling compression waves with a large initial gradient in the Korteweg-de Vries hydrodynamics. (Russian. English summary) [\[Zbl 07278474\]](#)

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Summary: We consider the Cauchy problem for the Korteweg-de Vries equation with a small parameter at the higher derivative and a large gradient of the initial function. By means of the numerical and analytic methods we show that the formal asymptotics obtained by renormalization is an asymptotic solution to the KdV equation. We obtain the graphs of the asymptotic solutions including the case of non-monotone initial data.

MSC:

35Q53 KdV equations (Korteweg-de Vries equations)

Keywords:

Korteweg-de Vries equation; Cauchy problem; compression wave

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