

Unique local solvability of the Cauchy problem for the mKdV equation in low regularity with periodic boundary condition

堤 誉志雄 (京都大学大学院・理)

2009 年 4 月 25 日

Abstract: We consider the solvability in low regularity of the Cauchy problem for the mKdV equation on the one dimensional torus. The mKdV equation is the prototype of nonlinear dispersive equations. It is known that when $s < 1/2$, the uniformly continuous dependence of solution on initial data breaks down in H^s , which implies the ill-posedness in some sense. It seems very interesting to investigate what happens to the case of $H^s, s < 1/2$. We show several results on the solvability in $H^s, 1/2 > s > 1/4$. This is a joint work with Kenji Nakanishi (Kyoto University) and Hideo Takaoka (Hokkaido University).