

Asymptotic stability of the solitary waves for the L2-subcritical Zakharov-Kuznetsov equation

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摘要： We prove the asymptotic stability of the solitary waves for the 2d and 3d L2-subcritical Zakharov-Kuznetsov equations. The proof follows the scheme developed by Martel and Merle for the gKdV case. However, compared with the gKdV (as well as the 2d ZK) case, we need to overcome two main obstacles: one is the regularity problem in H^1 ; the other is the properly selected modulational subspace for the positivity for the Virial operator in the reduced linear Liouville problem. The regularity boost technique is applied for the first obstacle, and the modulational subspace is selected intuitively from our numerical observation. In the meanwhile, the positivity of the Virial operator is also verified from the numerical computation. This strategy works for all the 2d and 3d L2-subcritical ZK equations, and thus, is considered to be optimal.

个人简介： 杨开老师博士毕业于美国乔治华盛顿大学（2018年），于2018年至2022年在佛罗里达国际大学从事博士后工作，后于2023年入职重庆大学数学与统计学院。杨开博士从事色散方程的理论与数值工作，主要研究相关方程爆破解的存在性与结构，以及孤立波的稳定性等问题，目前在American Journal of Mathematics, Siam Journal of Scientific Computing, Journal of Computational Physics等杂志上发表学术论文12篇。

时间： 2023年5月12日 14:00-15:00

地点： 文萃楼E909