Existence and stability of solitary waves for the generalized singular perturbed KdV equation

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摘要：In this talk, we consider the solitary waves of the generalized singular perturbed KdV equation, which is a long-wave approximation to the capillary-gravity waves in an infinitely long channel with a flat bottom. We obtain the existence of solutions for the L^2 subcritical, critical, and supercritical cases. Moreover, we discuss the asymptotic behavior of subcritical ground state solutions, the concentration behavior of critical ground state solutions, and positive and symmetric properties of the critical and supercritical solutions. Finally, we analyze the spectral stability of the solitary wave solutions.

个人简介：韩芳宇，2023年博士毕业于厦门大学，现为北京大学数学科学学院博士后，研究兴趣主要集中在偏微分方程解的稳定性和长时间渐近行为。