

Continuum limit from Fermi-Pasta-Ulam system to Korteweg de-Vries system

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In this talk, we are going to consider the Fermi-Pasta-Ulam (FPU) system. First, we briefly see the formal derivation of the Korteweg de-Vries (KdV) system from FPU system. Moreover, we observe dispersive properties of solutions to a reformulated FPU system, particularly, under periodic and non-periodic boundary conditions. Due to the lack of smoothing effect of dispersive solutions under the periodic setting, we additionally discuss the normal form reduction method for FPU system, which exactly corresponds to one for KdV system. This talk is based on the joint work with Younghun Hong(Chung-Ang University) and Chulkwang Kwak(Ewha Womans University).

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