

Boundary Exponential Stabilization for the KP-II Equation

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Abstract

We investigate boundary exponential stabilization for the linearized Kadomtsev–Petviashvili II (KP–II) equation. In particular, we focus on the analysis of the critical length phenomenon, which reflects the influence of the spatial domain and boundary conditions on the decay properties of the solutions. Therefore, our results are twofold: the first one establishes the exponential decay for the solutions with only one boundary input whenever the length is not a critical one [1], and the second one aims to design suitable boundary feedback laws that overcome the critical length phenomena keeping the exponential decay [2].

References

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- [2] F. A. Gallego and J. R. Muñoz, *Boundary exponential stabilization for the linear KP-II equation without critical size restrictions*, Journal of Dynamical and Control Systems, **31**, Article 14, 2025. <https://doi.org/10.1007/s10883-025-09733-4>.