

## LARGE TIME BEHAVIOR OF SOLUTIONS FOR THE GENERALIZED KADOMTSEV–PETVIASHVILI EQUATION

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*Abstract.* We consider the Cauchy problem for the generalized Kadomtsev–Petviashvili (KP) equation

$$\begin{cases} u_t + u_{xxx} + \sigma \partial_x^{-1} u_{yy} = -(u^\rho)_x, & (x, y) \in \mathbb{R}^2, t \in \mathbb{R}, \\ u(0, x, y) = u_0(x, y), & (x, y) \in \mathbb{R}^2, \end{cases}$$

where  $\sigma = 1$  or  $\sigma = -1$ ,  $\partial_x^{-1} = \int_{-\infty}^x dx'$ . Hayashi–Naumkin–Saut [2] have shown asymptotics of solutions for KP equation when  $\rho \geq 3$  and the initial data is sufficiently small and regular. Our aim is to fill the gap of the proof of  $L^\infty$  time decay of small solutions obtained in [2] and improve their result on the regularity of the data.

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