The paper considers solutions of dispersive equations in one dimension with periodic boundary conditions:

$$\frac{i}{2\pi} \partial_t u + \left(\frac{1}{2\pi i} \partial_x\right)^\alpha u = 0, \quad (x, t) \in [0, 1] \times [0, 1],$$

$$u(x, 0) = u_0(x) = \sum_k a_k e^{2\pi ikx},$$

with $\alpha = 2, 3, \ldots$. The main result states that if $u$ is a solution of the equation with

$$u_0(x) = \sum_{|k| \leq N} a_k e^{2\pi ikx},$$

then

$$\| \sup_{0 \leq t \leq \delta} |u| \|_{L^4_x} \leq c_{\delta}^{1/4} N^{\alpha/4 + \|u_0\|_{L^2_x}}.$$ 

The results are obtained from some improvements on bilinear types of estimates.

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### References


*Note: This list reflects references listed in the original paper as accurately as possible with no attempt to correct errors.*

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