

## Propagation of regularity of solutions to the k-generalized Korteweg-de Vries equation

Felipe Linares  
*IMPA, Rio de Janeiro*  
linares@impa.br

We will discuss special regularity properties of solutions to the IVP associated to the k-generalized KdV equations. In particular, for datum  $u_0 \in H^{3/4+}(\mathbb{R})$  whose restriction belongs to  $H^k((b, \infty))$  for some  $k \in \mathbb{Z}^+$  and  $b \in \mathbb{R}$  we prove that the restriction of the corresponding solution  $u(\cdot, t)$  belongs to  $H^k((\beta, \infty))$  for any  $\beta \in \mathbb{R}$  and any  $t \in (0, T)$ . Thus, this type of regularity propagates with infinite speed to its left as time evolves.