

**GENERALIZED ZAKHAROV-KUZNETSOV EQUATION IN
ANISOTROPIC WEIGHTED SOBOLEV SPACES**

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ABSTRACT. We consider the well-posedness of the initial value problem associated to the k -generalized Zakharov-Kuznetsov equation in fractional weighted Sobolev spaces $H^s(\mathbb{R}^2) \cap L^2(|x|^{2r_1} + |y|^{2r_2}) dx dy$, $s, r_1, r_2 \in \mathbb{R}$. Our method of proof is based on the contraction mapping principle and it mainly relies on the well-posedness results recently obtained for this equation in the Sobolev spaces $H^s(\mathbb{R}^2)$ and a new pointwise commutator type formula involving the group induced by the linear part of the equation and the fractional anisotropic weights to be considered.

This is a joint work with Miguel Pachón- Universidad Nacional de Colombia-Bogotá.