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Svetlana Roudenko* (sroudenko@fiu.edu), Department of Math & Stats, Florida International University, Miami, FL 33199. *Soliton stability in higher-dimensional generalization of KdV equation.*

We consider Zakharov-Kuznetsov (ZK) equation, a higher-dimensional generalization of the well-known KdV equation, which was introduced by Zakharov and Kuznetsov back in 1972, where they also asked the question about the stability of solitons in higher dimensions (the KdV is restricted as the one-dimensional model). We discuss the stability of solitary waves in the 3d ZK equation, proving that solutions in the energy space that are orbitally stable are also asymptotically stable, that is, as time goes to infinity, they converge to a rescaling and shift of the solitary wave $Q(x-t,y,z)$ in a certain rightward moving window. This is a joint work with Luiz Gustavo Farah, Justin Holmer, and Kai Yang. (Received September 17, 2019)