Contribution ID: **58** Type: **not specified**

Asymptotic stability in 3d Zakharov-Kuznetsov equation

Friday, September 6, 2019 11:00 AM (45 minutes)

We consider Zakharov-Kuznetsov (ZK) equation, a higher-dimensional generalization of the well-known KdV equation. We discuss the behavior of solutions close to the solitary wave given by Q(x-t,y,z) with Q being the standard ground state.
We discuss the stability of solitary waves in the 3d quadratic (subcritical) ZK equation, proving that solutions in the energy space that are orbitally stable (which is due to de Bouard) are also asymptotically stable, that is, as time goes to infinity, they converge to a rescaling and shift of Q(x-t,y,z) in some rightward moving window. While the local and global well-posedness is currently available only in higher regularity spaces (than finite energy) and due to Ribaud-Vento and Molinet-Pilod, we nevertheless obtain asymptotic stability in the energy space. This is a joint work with Luiz Gustavo Farah, Justin Holmer, and Kai Yang.

Primary author: ROUDENKO, Svetlana (Florida International University)

Presenter: ROUDENKO, Svetlana (Florida International University)

Session Classification: Morning Session