

Seminar EDPs

Speaker: Óscar Riaño, Florida International University-USA.

Title: Persistence and unique continuation principles in weighted spaces for solutions of the fractional Korteweg-de Vries equation.

Abstract: Persistence problems in weighted spaces have been studied for different dispersive models involving non-local operators. Generally, these equations do not propagate polynomial weights of arbitrary magnitude, and the maximum decay rate is associated with the dispersive part of the equation. Altogether, this analysis is complemented by unique continuation principles that determine optimal spatial decay. This talk aims to show our results on the preceding questions for a weakly dispersive perturbation of the inviscid Burgers equation, which comprises the Burgers-Hilbert equation and dispersive effects weaker than those of the Benjamin-Ono equation.

References

- [1] G. Fonseca, F. Linares, and G. Ponce. The IVP for the dispersion generalized Benjamin-Ono equation in weighted Sobolev spaces. *Annales de l'Institut Henri Poincaré (C) Non Linear Analysis*, 30(5):763-790, 2013.
- [2] C. Klein, F. Linares, D. Pilod, and J.-C. Saut. On Whitham and Related Equations. *Studies in Applied Mathematics*, 140(2):133-177, 2018.
- [3] C. Klein and J.-C. Saut. A numerical approach to blow-up issues for dispersive perturbations of Burgers' equation. *Physica D: Nonlinear Phenomena*, 295-296:46-65, 2015.
- [4] O. Riaño On persistence properties in weighted spaces for solutions of the fractional Korteweg-de Vries equation. 34 (7): 4604-4660, 2021.

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Thursday (7/08) at 4:15 pm (Chilean time).