Gain of regularity for a coupled system of generalized nonlinear Schrödinger equations

> RAUL NINA MOLLISACA \* Universidad de Tarapacá - Arica-Chile

## Abstract

In this paper we study the smoothness properties of solutions to a one-dimensional coupled nonlinear Schrödinger system equations that describes some physical phe- nomena such as propagation of polarized laser beams in birefringent Kerr medium in nonlinear optics. We show that the equations dispersive nature leads to a gain in regularity for the solution. In particular, if the initial data  $(u_0, v_0)$  possesses certain regularity and sufficient decay as  $|x| \to \infty$ , then the solution (u(t), v(t)) will be smoother than  $(u_0, v_0)$  for  $0 < t \leq T$  where T is the existence time of the solution.

## References

 J.C. Ceballo, M. Sepúlveda and O. Vera. Gain in regularity for a coupled nonlinear Schrödinger system. Bol. Soc. Paran. Math. Vol. 4. 1-2, (2006) 41–68.

Tipo de Apresentação: Oral

<sup>\*</sup>e-mail: raulnmollisaca@gmail