Research Report 2017

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Publications

1. Y. Cho, T. Ozawa
Short-range scattering of Hartree type fractional NLS II, Nonlinear Analysis,**157**(2017), 62-75.
DOI:10.1016/j.na.2017.03.005

2. S. Machihara, T. Ozawa, H. Wadade
Remarks on the Rellich inequality, Math.Z., **286**(2017), 1367-1373.
DOI:10.1007/s00209-016-1805-8

3. J. Fan, T. Ozawa
Uniform existence and uniqueness for a time-dependent Ginzburg-Landau model for superconductivity,
Nonlinear Analysis and Differential Equations, **5**(2017), no.6, 249-259.
https://doi.org/10.12988/nade.2017.7713

4. J. Fan, T. Ozawa
Local well-posedness for an Ericksen-Leslie's parabolic-hyperbolic compressible non-isothermal model for liquid crystals,
Electron. J. Differential Equations, **2017**(2017), No. 232, 1-8.
(Open Access)

5. K. Fujiwara, T. Ozawa
Lifespan of strong solutions to the periodic nonlinear Schrödinger equation without gauge invariance,
Journal of Evolution Equations, **17**(2017), 1023-1030.

6. J. Bellazzini, T. Ozawa, N. Visciglia
Ground states for semi-relativistic Schrödinger-Poisson-Slater energy,
Funkcialaj Ekvacioj, **60**(2017), 353-369.

7. Y. Cho, G. Hwang, T. Ozawa
On the focusing energy-critical fractional nonlinear Schrödinger equations,
Adv. Differential Equations, **23**, No.3-4, (2018), 161-192.

8. Y. Cho, T. Ozawa
Small data scattering of Hartree type fractional Schrödinger equations in dimension 2 and 3,
J. Korean Math. Soc., **55** (2018), No.2, 373-390.
https://doi.org/10.4134/JKMS.j170224

Invited Talks

1. “Lifespan of periodic solutions to nonlinear Schrödinger equations”
RIMS Workshop Nonlinear Wave and Dispersive Equations
August 30, 2017
Kyoto University, Kyoto, Japan

2. “Blowup solutions for the derivative nonlinear Schrödinger equation on torus”
   Recent topics on PDEs
   November 17, 2017
   Chuo University, Tokyo, Japan

3. “Lifespan of periodic solutions to derivative nonlinear Schrödinger equations”
   Nonlinear Dispersive Equations in Kumamoto, 2018
   January 20, 2018
   Kumamoto University, Kumamoto, Japan

4. “Lifespan of blowup solutions to the nonlinear Schrödinger equations on torus”
   Hyperbolic Partial Differential Equations and Related Topics-in honor of the 60th birthday of Professor Tokio Matsuyama-
   January 27, 2018
   Chuo University, Tokyo, Japan

5. “On improved Hardy inequalities”
   Workshop on Harmonic analysis and Nonlinear Evolution Equations
   February 23, 2018
   Aula Magna and Sala Seminari, Department of Mathematics, Pisa, Italy

Conference Organized

1. Nonlinear Science Colloquium
   Waseda University

   May 31, 2017　Hiraku Nishimori (Hiroshima University)
   “Intelligent Group Behavior by Unintelligent Individuals: Autonomous Task Allocation Dynamics of Foraging Ants”
   June 29, 2017　Hideo Kozono (Waseda University)
   “Liouville type theorem for the Navier-Stokes equations”
   July 12, 2017　Hiroshi Kori (Ochanomizu University)
   「体内時計をめぐる数理と実験の協働」(in Japanese)

2. International Workshop on “Fundamental Problems in Mathematical and Theoretical Physics”
   Top Global University Project, Waseda University
   July 24-28, 2017
   02 Conference Room, 1st Floor, 55 Bldg. Waseda University

3. The 42st Sapporo Symposium on Partial Differential Equations
   August 8-10, 2017
   Hokkaido University

4. Workshop on Hyperbolic and Parabolic Systems
   December 12, 2017
   Wasdea University

Research Summary

- We have clarified a relationship between non-gauge structure and blowup of solutions for nonlinear Schrödinger equations.

- We have proved the existence of ground and scattering states for semirelativistic fields.

- We have formulated Rellich's inequality in the framework of equalities.