Yongming Luo

Faculty of Computational Mathematics and Cybernetics
Shenzhen MSU-BIT University
International University Park Road 1, Shenzhen, Guangdong, China

luo.yongming@smbu.edu.cn

Positions

- *Senior Lecturer*, Shenzhen MSU-BIT University (2023.03-Present)
- *Postdoctoral Research Associate*, Technische Universität Dresden (2020.04-2023.01)
  - Mentor: Prof. Dr. Stefan Neukamm

Education

- Ph.D. in Mathematics, Universität Kassel (2014-2019)
  - Title: *Existence and Regularity Results of a Ferroelectric Phase-Field Model*
  - Advisor: Prof. Dr. Dorothee Knees
- M.Sc. in Mathematics, Technische Universität München (2011-2014)
- B.Sc. in Mathematics, Technische Universität München (2008-2011)

Research Interests

- Long time dynamics of nonlinear dispersive equations
- Homogenization and dimension reduction problems arising in material science

Publications

1. **A Legendre-Fenchel identity for the nonlinear Schrödinger equations on $\mathbb{R}^d \times \mathbb{T}^m$: theory and applications** . Submitted. (arxiv 2307.16153)
2. **On the focusing fractional nonlinear Schrödinger equation on the waveguide manifolds** (joint with A. Esfahani, H. Hajaiej and L. Song). Submitted. (arxiv 2305.19791)
3. **Almost sure scattering for the defocusing cubic nonlinear Schrödinger equation on $\mathbb{R}^3 \times \mathbb{T}$.** Submitted. (arxiv 2304.12914)
4. **Efficient uncertainty quantification for mechanical properties of randomly perturbed elastic rods** (joint with P. Dondl, S. Neukamm and S. Wolff-Vorbeck). Submitted. (arxiv 2304.08785)
5. **On well-posedness results for the cubic-quintic NLS on $\mathbb{T}^3$** (joint with X. Yu, H. Yue and Z. Zhao). Submitted. (arxiv 2301.13433)
6. **Normalized ground states and threshold scattering for focusing NLS on $\mathbb{R}^d \times \mathbb{T}$ via semivirial-free geometry**. Submitted. (arxiv 2205.04969)
7. **Sharp scattering for focusing intercritical NLS on high-dimensional waveguide manifolds**. *Math. Ann.*, to appear. (arxiv 2212.10908)

8. **On existence and stability results for normalized ground states of mass-subcritical biharmonic NLS on $\mathbb{R}^d \times \mathbb{T}^n$** (joint with H. Hajaiej and L. Song). *SIAM J. Math. Anal.*, to appear. (arxiv 2212.00750)

9. **On long time behavior of the focusing energy-critical NLS on $\mathbb{R}^d \times \mathbb{T}$ via semivirial-vanishing geometry**. *J. Math. Pures Appl.* 177 (2023), 415-454. (arxiv 2206.07346)

10. **On sharp scattering threshold for the mass-energy double critical NLS via double track profile decomposition**. *Ann. Inst. H. Poincaré C Anal. Non Linéaire* 41 (2024), no. 1, 187-255. (arxiv 2108.00915)

11. **Sharp scattering threshold for the cubic-quintic NLS in the focusing-focusing regime**. *J. Funct. Anal.* 283 (2022), no. 1, Paper No. 109489, 34 pp.

12. **On the local in time well-posedness of an elliptic-parabolic ferroelectric phase-field model**. *Nonlinear Anal. Real World Appl.* 65 (2022), Paper No. 103462, 30 pp.

13. **On 3d dipolar Bose-Einstein condensates involving quantum fluctuations and three-body interactions** (joint with A. Stylianou). *Discrete Contin. Dyn. Syst. Ser. B* 26 (2021), no. 6, 3455-3477.

14. **Ground states for a nonlocal mixed order cubic-quartic Gross-Pitaevskii equation** (joint with A. Stylianou). *J. Math. Anal. Appl.* 496 (2021), no. 1, Paper No. 124802, 20 pp.

Unpublished notes

1. **Large data global well-posedness and scattering for the focusing cubic nonlinear Schrödinger equation on $\mathbb{R}^2 \times \mathbb{T}$**. Unpublished note. (arxiv 2202.10219)

2. **Normalized ground states for 3D dipolar Bose-Einstein condensate with attractive three-body interactions** (joint with A. Stylianou). Unpublished note. (arxiv 2202.09801)

3. **Scattering threshold for radial defocusing-focusing mass-energy double critical nonlinear Schrödinger equation in $d \geq 5$**. Unpublished note. (arxiv 2106.06993)