

Yifan SUN

Education

- May 2017 – present Ph.D. Degree in Laser physics
(Defence time: Jan. 12 2021) Supervisor: Fabien Bretenaker & Alfredo De Rossi
Laboratoire Lumière, Matière et Interfaces (LuMIn),
Universite Paris-saclay, France
- Sept 2013 – July 2016 M.Sc. in Radio physics GPA: 3.86/(4.0)
Supervisor: Prof. Shaoqiu Xiao
School of Physical Electronics,
University of Electronic Science and Technology of China (UESTC), Chengdu, China
- Sept 2009 – July 2013 B.Sc. in Electronic Information Science and Technology, GPA: 3.50
School of Physics & Optoelectronic Engineering, Xidian University, Xi'an, China
Minor in Technology of Computer Application
School of Computer Science and Technology, Xidian University, Xi'an, China

Publications

1. Yifan Sun, Sylvain Combrié, Alfredo De Rossi, and Fabien Bretenaker, Robustness of mode-locking in harmonic cavity nanolasers subjected to potential distortions. *Optics Express*, 29(4), 5782-5794 (2021).
2. Yifan Sun, Sylvain Combrié, Alfredo De Rossi, and Fabien Bretenaker, Dynamics of mode-locked nanolasers based on Hermite-Gaussian modes. *Phys. Rev. A*. 102, 043503 (2020).
3. Yifan Sun, Sylvain Combrié, Fabien Bretenaker, and Alfredo De Rossi, Mode Locking of the Hermite-Gaussian Modes of a Nanolaser. *Phys. Rev. Lett.* 123, 233901 (2019).
4. Yifan Suen, Shaoqiu Xiao, et al, Time-frequency representation measurement based on temporal Fourier transformation. *Optics Communications*. 376, 86–91 (2016).

Conference:

1. Talk – International Symposium on Physics and Applications of Laser Dynamics 2019, Metz, France
2. Talk – IEEE Photonics Society Conference 2019, San Antonio, TX USA
3. Talk – IEEE International Conference on Communication Problem-Solving 2015, Guilin, China

Research Experience

● PhD project: Theory of mode-locked lasers based on non-conventional cavity.

CNRS Lab Lumin & Thales:

May 2017 – Present

- Modeling and numerical analysis of the mode-locked laser based on the harmonic photonic cavity.
- Proof of the mode-locking, cavity soliton, instability analysis.

● Precision Diagnosis Method: Time-Resolved Femtosecond Microscopy Techniques.

In Professor Xiao Shaoqiu's Group in UESTC, China:

Sept. 2014– Dec. 2015

- Precisely characterizing ultrafast laser pulses based on the technique of time-lens.
- Main responsibility: Developing the theoretical model and carrying out the numerical simulation.

Training

- Doctoral courses: Laser physics, Nonlinear Dynamics of Lasers, Nanophotonics
 - Summer school: Excitons for photonic applications in Les houches, France
- Master courses: To get graduation, The marks for all subjects should be above 60/100.
Advanced EM Field theory (89.5/100), Matrix Theory and Computation in Electromagnetic Application (92/100), Mathematical method in EM fields (98.6/100), Microwave Circuit and system (86.2/100), English Reading Translation in M.S. Degree (77/100), English Listening, Speaking and Writing in M.S. Degree (88/100)
- Bachelor courses: To get graduation, The marks for all subjects should be above 60/100.
Advanced Math, Probability Theory, Physics, Quantum Mechanics, Equations of Mathematical Physics, Computational Physics, Linear Algebra, Circuit Analysis, Analog Circuits, Digital Circuits, RF Circuits, Signal and system, etc.

Awards & Honors:

- 2009: 3rd Prize, Outstanding Student Scholarship of XDU
- 2010: 3rd Prize, Outstanding Student Scholarship of XDU
- 2011: National Encouragement scholarship
- 2012: 2nd Prize, Outstanding Student Scholarship of XDU
- 2013: 1st Prize postgraduate Scholarship of UESTC
- 2014: 1st Prize postgraduate Scholarship of UESTC
- 2015: 3rd Prize postgraduate Scholarship of UESTC
- 2016-2020: The scholarship from China scholarship council

Referees

Fabien Bretenaker	Laboratoire Lumière, Matière et Interfaces, Orsay, France
PhD supervisor	fabien.bretenaker@universite-paris-saclay.fr
Alfredo De Rossi	Thales Research and Technology, Palaiseau, France
Co-supervisor	alfredo.derossi@thalesgroup.com