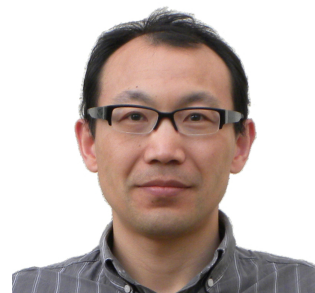


严运安

博士 教授 兼职博士生导师

性别: 男
手机: 18561016286
电子邮箱: yunan.yan@ymail.com
地址: 山东省烟台市芝罘区红旗中路186号
邮编: 264025



教育背景

1993年9月–1997年7月 广东省广州市华南师范大学化学系，获学士学位。

1997年9月–2002年9月 中国科学院理论物理研究所硕博连读，获哲学博士学位。

工作经历

2018年9月至今 鲁东大学物理与光电工程学院，科研教学。

2015年10月–2016年7月 中组部“西部之光”访问学者，中国工程物理研究院北京计算科学研究中心。

2012年12月–2018年8月 贵州师范学院，贵州省纳米材料模拟与计算重点实验室，科研教学。

2011年10月–2012年10月 日本九州大学综合理工研究院学术研究员。

2009年3月–2011年9月 德国罗斯托克大学物理系，研究学者。

2007年9月–2009年2月 德国柏林自由大学化学系，研究学者。

2004年8月–2007年8月 美国德州理工大学化学系，博士后。

2002年10月–2004年7月 中国科学院化学研究所分子反应动力学国家重点实验室，博士后。

研究与招生

研究兴趣：集中于开放量子系统的动力学理论与计算方法发展，包括非马尔可夫耗散动力学、精确可解模型的解析求解以及半经典动力学。通过构建随机微分方程、级联方程及有效哈密顿量等理论框架，结合数值算法优化，旨在揭示分子体系、凝聚态环境中的量子相干、耗散与光谱特性。

授课：《原子物理学》（本科），《高等统计物理学》（研究生）。

招生方向：理论物理，学科教学（物理学）。

科研项目

1. 国家自然科学基金原创探索计划项目子课题，批准号：22450002，量子演化的随机场表示，参与者：严运安，执行时间：2025/01-2027/12，经费：140.0万元。
2. 国家自然科学基金面上项目，批准号：21973036，热致自旋交叉中非谐性振动的影响与调控，主持人：严运安，执行时间：2020/01-2023/12，经费：65.0万元。
3. 国家自然科学基金面上项目，批准号：21373064，电子-振动相互作用对高分子材料热电性能影响的研究，主持人：严运安，执行时间：2014/01-2017/12，经费：80.0万元。
4. 贵州省高校优秀科技创新人才，批准号：黔教合KY字[2013]142，有机热电材料的理论设计，主持人：严运安，执行时间：2014/01-2015/12，经费：1.0万元。
5. 贵州省重点支持学科物理化学，黔学位合字ZDXK[2014]18号，主持人：严运安，执行时间：2014/09-2017/08，经费：15.0万元。
6. 贵州省碳基热电材料科技创新人才团队，黔科合人才团队[2014]4021号，主持人：严运安，执行时间：2014/09-2017/08，经费：15.0万元。

论文列表

1. Zhao-Wei Wang, Hong-Yang Ma, **Yun-An Yan**, Lian-Ao Wu, Zhao-Ming Wang, *Machine-learning-assisted pulse design for state preparation in a noisy environment*, [myhref10.1016/j.physa.2025.131081](https://doi.org/10.1016/j.physa.2025.131081) *Physica A* **681**, 131081 (2026).
2. **Yun-An Yan** and Jiushu Shao, *Deriving propagators with stochastic quantum evolution*, [Phys. Rev. A](https://doi.org/10.1103/PhysRevA.111.032219) **111**, 032219 (2025).
3. H. T. Cui, **Yun-An Yan**, M. Qin, and X. X. Yi, *Effective Hamiltonian approach to the quantum phase transitions in the extended Jaynes-Cummings model*, [Phys. Rev. A](https://doi.org/10.1103/PhysRevA.109.042202) **109**, 042202 (2024).
4. Chuan Guan and **Yun-An Yan**, *The role of anharmonicity in single-molecule spin-crossover*, [Chem. Phys. Lett.](https://doi.org/10.1016/j.cpl.2024.141297) **845**, 141297 (2024).
5. **Yun-An Yan** and Jiushu Shao, *Exact dynamics of the spin-boson model at the Toulouse limit*, [Phys. Rev. A](https://doi.org/10.1103/PhysRevA.108.012218) **108**, 012218 (2023).
6. **Yun-An Yan**, Xiao Zheng, and Jiushu Shao, *Piecewise ensemble averaging stochastic Liouville equations for simulating non-Markovian quantum dynamics*, [New J. Phys.](https://doi.org/10.1088/1751-8752/ab9012) **24**, 103012 (2022).
7. Lu Han, Arif Ullah, **Yun-An Yan**, Xiao Zheng, YiJing Yan, and Vladimir Chernyak, *Stochastic equation of motion approach to fermionic dissipative dynamics. I. Formalism*, [J. Chem. Phys.](https://doi.org/10.1063/1.5134105) **152**, 204105 (2020).
8. Arif Ullah, Lu Han, **Yun-An Yan**, Xiao Zheng, YiJing Yan, and Vladimir Chernyak, *Stochastic equation of motion approach to fermionic dissipative dynamics. II. Numerical implementation*, [J. Chem. Phys.](https://doi.org/10.1063/1.5134106) **152**, 204106 (2020).
9. **Yun-An Yan**, Haobin Wang, and Jiushu Shao, *A unified view of hierarchy approach and formula of differentiation*, [J. Chem. Phys.](https://doi.org/10.1063/1.5134110) **151**, 164110 (2019).
10. Zheng-Yang Zhou, **Yun-An Yan**, Stephen Hughes, Jianqiang You, and Franco Nori, *Accessing the bath information in open quantum systems with the stochastic c-number Langevin equation method*, [Phys. Rev. A](https://doi.org/10.1103/PhysRevA.100.042112) **100**, 042112 (2019).

11. Shuanglin Sun and **Yun-An Yan**, *High-order strong methods for stochastic differential equations with colored noises*, *Chem. Phys. Lett.* **735**, 136766 (2019).
12. Lu Han, Valdimir Y. Chernyak, **Yun-An Yan**, Xiao Zheng and Yijing Yan, *Stochastic Representation of Non-Markovian Fermionic Quantum Dissipation*, *Phys. Rev. Lett.* **123**, 050601 (2019).
13. **Yun-An Yan**, *Stochastic simulation of anharmonic dissipation: II. Harmonic bath potentials with quadratic couplings*, *J. Chem. Phys.* **150**, 074106 (2019).
14. **Yun-An Yan**, Jian Liu and Jiushu Shao, *A Semiclassical Initial-Value Representation for Quantum Propagator and Boltzmann Operator*, *J. Comp. Chem.* **40**, 1161 (2019).
15. Jihua Zhang, Mingsen Deng, **Yun-An Yan**, Tiejun Xiao, Wei Ren, and Peihong Zhang, *Tunable Type-II BiVO₄/g-C₃N₄ Nanoheterostructures for Photocatalysis Applications*, *Phys. Rev. Appl.* **11**, 044052 (2019).
16. C. Li, Q. Chen, **Yun-An Yan**, Y. Li and Y. Zhao, *High-temperature thermoelectric properties of Ca_{0.92}La_{0.04}RE_{0.04}MnO₃ (RE = Sm, Dy and Yb) prepared by coprecipitation*, *Mater. Res. Expr.* **5**, 025510 (2018).
17. C. Li, Q. Chen and **Yun-An Yan**, *Effects of Pr and Yb Dual Doping on the Thermoelectric Properties of CaMnO₃*, *Materials* **11**, 1807 (2018).
18. **Yun-An Yan** and Jorge Morales, *Non-Adiabatic Molecular Dynamics Simulations of Non-Charge-Transfer and Charge-Transfer Scattering in H⁺ + CO₂ at E_{Lab}=30 eV*, *Chin. J. Chem. Phys.* **31**, 300 (2018).
19. **Yun-An Yan** and Jiushu Shao, *Equivalence of stochastic formulations and master equations for open systems*, *Phys. Rev. A* **97**, 042126 (2018).
20. **Yun-An Yan**, *Low-storage Runge-Kutta method for simulating time-dependent quantum dynamics*, *Chin. J. Chem. Phys.* **30**, 277 (2017).

21. L. Jin, **Yun-An Yan** and Y. Aoki, *Computational scheme to determine local vibrations of large systems using elongation method*, [Theor. Chem. Acc. **136**, 11 \(2016\)](#).
22. **Yun-An Yan**, *Stochastic simulation of anharmonic dissipation. I. Linear response regime*, [J. Chem. Phys. **145**, 204111 \(2016\)](#).
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25. **Yun-An Yan** and Yun Zhou, *Hermitian non-Markovian stochastic master equations for quantum dissipative dynamics*, [Phys. Rev. A **92**, 022121 \(2015\)](#).
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40. Y.H. Li, **Yun-An Yan** and J. Shao, *Dynamical Localization of Two-level System*, *Acta Physico-Chimica Sinica*, **20**, 1037 (2004).
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邀请报告

1. Nov. 18, 2024, Exact dynamics of spin-boson model at Toulouse limit: Analysis based on noise decomposition, The 13rd Workshop on the Simulation and Statistics of Complex Systems Shanghai-New York University, Shanghai.
2. Aug. 28, 2024, Piecewise Ensemble Average Stochastic Liouville Equations, Shandong University.
3. Aug. 8, 2024, Decomposition and Combination of noises in Stochastic Liouville Equation, The 15th Conference on Theoretical and Computational Chemistry.
4. Jun. 27, 2024, Reductionism in Stochastic Description of Quantum Brownian Motion, Xian Technology University.
5. Nov. 29, 2023, Generalized Langiven Equation, Workshop on Quantum Dissipative Systems, Beijing Computational Science Research Center, Beijing.
6. Jun. 14, 2023, Piecewise Ensemble Averaging Stochastic Liouville Equations for Simulating non-Markovian Quantum Dynamics, The 33rd Annual Meeting of Chinese Chemistry Society, Qingdao, Shandong.
7. Dec. 19, 2022, Noise Decomposition in Stochastic Liouville Equation, Lanzhou University, Lanzhou.
8. Aug. 28, 2022, Piecewise Ensemble Average Stochastic Liouville Equations for Simulating Quantum Brownian Motion, Yantai University.
9. Nov. 16, 2020, Convergence of Stochastic Methods for Describing Quantum Dissipative Dynamics and non-Markovian Quantum Master Equations, Yantai University.
10. Jun. 15, 2021, Evolution of Clock, Ludong University.
11. Apr. 21, 2021, Convergence of stochastic methods for describing quantum dissipative dynamics, Quantum and Classical Dynamics in Chemistry, the 32nd Annual Meeting of Chinese Chemistry Society, Zhuhai, Guangdong.
12. Apr. 11, 2021, Convergence of Stochastic Methods for Simulating Quantum Dissipative Dynamics, the workshop on the frontier of low-dimension quantum many-body systems , Yantai, Shandong.

13. Nov. 19, 2020, Convergence of Stochastic Methods for Describing Quantum Dissipative Dynamics and non-Markovian Quantum Master Equations, School of Opto-electronic Information Science and Technology, Yantai University, Yantai, Shandong.
14. Oct. 26, 2019, High-order strong methods for stochastic differential equations with colored noises, the 8th Workshop On the Simulation and Statistics of Complex Systems , Nanjing University, Nanjing.
15. Jul. 27, 2019, Hierarchy Approach for Dissipative Exciton Dynamics in Molecular Aggregates, 2019 Annual Meeting of Shandong Physical Society, Weifang, Shandong.
16. Oct. 22, 2018, Exciton Seebeck Effect and Exciton Interference in Molecular Aggregates, CSRC Workshop on Quantum Coherence in Energy Transfer and Conversion, Beijing Computational Science Research Center, Beijing.
17. May 12, 2018, Stochastic simulations of quantum dissipative dynamics: Efficient schemes and applications to anharmonic bath, College of Chemistry, Xiamen University, Xiamen.
18. Nov. 27, 2016, Low-storage Runge-Kutta methods for simulating time-dependent quantum dynamics, the Sixth Workshop On the Simulation and Statistics of Complex Systems , the Shenzhen Graduate School, Peking University, Shenzhen.
19. May 31, 2016, Stochastic Simulation of Quantum Dissipative Dynamics, Beijing Computational Science Research Center, Beijing.
20. Dec. 18, 2015, Laser control of two-exciton state under dissipation, School of Science, Beijing Jiaotong University, Beijing.
21. Oct. 24, 2015, Stochastic simulation of anharmonic bath, The Fifth Workshop On the Simulation and Statistics of Complex Systems , University of Chinese Academy of Sciences, Huairou, Beijing.
22. Oct. 2, 2015, Stochastic Simulation of Quantum Dissipative Dynamics, Siberian branch of Russian Academy of Sciences, Krasnoyarsk, Russia.

23. Jul. 21, 2015, Equivalence between quantum master equation and quantum state diffusion, Jiaxiu Workshop: Non-equilibrium Processes in Small Systems Guizhou Normal College, Guiyang.
24. Jun. 6, 2015, Non-Markovian Stochastic Scheme for Quantum Dissipative Dynamics, Recent Advances in Quantum Dynamics and Thermodynamics of Complex Systems, a satellite meeting of the 15th International Congress of Quantum Chemistry (ICQC), Peking University, Beijing.
25. Jan. 9, 2015, The hierarchical equation of motion and the application for the simulation of thermoelectricity, the 9th International Conference on Computational Physics, National University of Singapore, Singapore.
26. Sep. 17, 2014, Quantum Dynamics Nature of Human Group Behavior, Guizhou Provincial Key Laboratory of Computational Nano-material Science, Guizhou Normal College, Guiyang, Guizhou.
27. Sep. 1, 2014, Laser Control of the Double Exciton States under Dissipation, the Second National Forum of Young Chemists and Physists, Guiyang, Guizhou.
28. Aug. 22, 2014, Exciton Seebeck in Molecular Systems, the 2014 International Workshop on Frontiers of Theoretical and Computational Physics and Chemistry, Quzhou, Zhejiang.
29. Jun. 27, 2014, Ultrafast dynamics of hydrogen bonds in nucleic base pairs Department of Chemistry, Central China Normal University, Wuhan, Hubei.
30. Jun. 14, 2014, The impact of Temperature difference on exciton dynamics, the 12th National Conference of Quantum Chemistry, Taiyuan, Shanxi.
31. May 27, 2014, Efficient Parallelization for Hierarchical Equations, the 2014 Workshop on Applied Technology of High Performance Computing (Guizhou), Guiyang, Guizhou.
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34. Apr. 28, 2009, Vibrational Dynamics of Hydrogen Bonds in Nucleic Acid Base Pair, Institut für Physik, Universität Rostock, Germany.
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36. Nov. 9, 2005, Stochastic simulation of the quantum dissipative dynamics, Institute of Theoretical Physics, Chinese Academy of Sciences, Beijing.