周云松

教授

所属学科	理论物理
研究方向	电磁场理论
招生方向	理论物理、光学
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个人简介

周云松，物理系教授，博士生导师。曾在中国人民解放军海军服役三年。退伍后分别在兰州大学、北京大学、中国原子能院获得学士硕士和博士学位。1997年在美国纽约州立大学布法罗校区做访问学者。曾解出中子散射Darwin方程的Delta函数二维解析解，从而原则上彻底解决了中子在嵌镶晶体中散射分布的计算问题；将统计物理中计算临界点的变分累积展开（VCE）法推广到低温和高温区，可用来计算系统的热力学量；揭示了金属超透镜的成像机制（零折射理论）；还从事过超导理论、光子晶体理论和超材料理论研究。发表包括PRL、PRA、PRB、PRE、EPL、OE等国际著名期刊在内的SCI论文120余篇。

研究方向

电磁场理论

主讲课程

量子力学、磁性量子理论（研），电磁场理论专题（研）。还曾主讲过统计物理，量子统计（研），电动力学（部分），数据结构等课程。

教学成果

桃李虽未满天下，弟子三千落京华。潜心耕读无旁骛，弦歌声起映晚霞。

科研成果

发表SCI论文一百二十余篇。部分第一者和通信作者文章如下

1. Yunsong Zhou, et al, "Multiple Bragg scattering in a slab of crystals" in《Theoretical Physics 2001》Chapter 1，p1 - 19， Nova Science Publishers, Inc, New York (2002) (this book is the volume 238 of 《Horizons in World Physics》)

2. Yunsong Zhou, Jinchang Chen, Zheng Rong, D. L. Lin, **Phys. Lett. A** 298 (2002) 287-292 "Effects of interlayer coupling in a magnetic trilayer system"

3. Yun-Song Zhou, Ben-Yuan Gu, Fu-He Wang, **J. Phys.: Condens. Matter 15** (25 June 2003) 4109-4118 "Guide modes in photonic crystal heterostructures composed of rotating non-circular air cylinders in two-dimensional lattices"

4. Yun-Song Zhou, Ben-Yuan Gu，and Fu-He Wang，**Eur. Phys. J. B 37**, 293-299 (2004) "Photonic-band-gap structures and guide modes in two-dimensional magnetic photonic crystal heterostructures"

5. Yun-Song Zhou, Xue-Hua Wang, Ben-Yuan Gu, and Fu-He Wang **Phys. Rev. E 72** （2005）017601. "photonic band gap effects on spontaneous emission lifetimes of an assembly of atoms in two-dimensional photonic crystals"

6．Yun-Song Zhou, Xue-Hua Wang, Ben-Yuan Gu, and Fu-He Wang, **Phys. Rev. Lett**. **96** 2006）103601. "Switching control of spontaneous emission by polarized atoms in two-dimensional photonic crystals"

7. Yun-Song Zhou, Ben-Yuan Gu, Fu-He Wang, **EPL 75** (2006) 737, "Ferromagnetic wire lattice with a tunable negative index of refraction for microwaves using an external magnetic field"

8. Yun-Song Zhou, Ben-Yuan Gu, Sheng Lan, and Li-Ming Zhao，**Phys. Rev. B 78,** (2008) 081404(R). "Time-domain analysis of mechanism of plasmon-assisted extraordinary optical transmission"

9. Yun-Song Zhou, Ben-Yuan Gu, Huai-Yu Wang, Sheng Lan, **EPL, 85**, 24005 (2009). "Multi-reflection processes of extraordinary optical transmission in a single subwavelength slit cut into a metallic film"

10. Chao Li, **Yun-Song Zhou,** Fu-He Wang，**J. Opt. Soc. Am. B 26** （2009）2248. "Characteristics of spontaneous emission in confined one-dimensional photonic crystals"

11. Yun-Song Zhou, Ben-Yuan Gu, and Huai-Yu Wang **Phys. Rev. A 81**, (2010) 015801. "Band-gap structures of surface-plasmon polaritons in a subwavelength metal slit filled with periodic dielectrics"

12. Chao Li, **Yun-Song Zhou**, Huai-Yu Wang，**J. Opt. Soc. Am. B 27** （2010）59. "Wavelength squeeze of surface plasmon polariton in a subwavelength metal slit"

13. Yun-Song Zhou, Ben-Yuan Gu, Huai-Yu Wang, and Li-Ming Zhao，**Phys. Rev. A 81**, 035803 (2010) "Enhancement of the extraordinary optical transmission in a subwavelength metal slit dressed by a metal grating"

14. Qian Zhao, Chao Li, **Yun-Song Zhou,** and Huai-Yu Wang，**J. Phys.: Condens. Matter** 23 (2011) 015005 (9pp). "The mechanism of the polarization dependence of the optical transmission in subwavelength metal hole arrays"

15. **Yun-Song Zho**u, Huai-Yu Wang, Li-Ming Zhao, Sheng Lan, **Phys. Rev. A** 83 (2011) 035805. "Enhancement of the contrast ratio associated with surface waves in a metal pillar-slit structure"

16. Chao Li,. **Yun-Song Zhou**, Huai-Yu Wang, and Fu-He Wang，**Opt. Express,** 19, 10073 (2011). "Investigation of the wave behaviors inside a step-modulated subwavelength metal slit"

17. C. Li, **Y. S. Zhou**, and H.Y. Wang, **Eur. Phys. J. D** (2012) 66: 9. "Scattering mechanism in a step-modulated subwavelength metal slit: a multi-mode multi-

reflection analysis"

18. Chao Li, **Yun-Song Zhou**, and Huai-Yu Wang，**Opt. Express**，20 （2012）7726. "Plasmonic band structures and optical properties of subwavelength metal/dielectric/metal Bragg waveguides"

19. Yun-Song Zhou, Huai-Yu Wang and Hai Wang，**EPL**, 98 (2012) 67005, "Zero refraction in natural materials and the mechanism of metal superlens"

20. Chen Zhao, **Yun-Song Zhou**, Huai-Yu Wang, Hai Wang, Li-Ming Zhao，**Opt. Comm.** 316 (2014) 17–21. "Mechanism of the optical unidirectional transmission in metal subwavelength grating with different surfaces$"

21. Ming-Yang Wang, **Yun-Song Zhou**, Huai-Yu Wang，**Opt. Comm.** 322 (2014) 198–201. "An optical unidirectional device tunable by a magnetic .field"

22. Yun-Song Zhou, Pei-Jie Wang, Hai Wang, Sheng-Fei Feng, **EPL,** 107 (2014) 54005. "Fano resonance generated by magnetic scatterer in micro metal slit"

23. Yun-Song Zhou, Li-Ming Zhao, Sheng Lan and Hai Wang, **EPL**, 109 (2015) 54003. "An optical one-way device constructed with an epsilon-near-zero prism inserted in a metal slit"

24. Yun-Song Zhou, Hai Wang, Li-Ming Zhao and Huai-Yu Wang，Eur. Phys. J. D, 69 (2015) 201 . "Optical unidirectional transmission in metal slit structures caused by convergent and shield effects"

25. Chen Zhao, **Yun-Song Zhou**, Yan Zhang, Huai-Yu Wang, **Opt. Comm.**368 (2016) 180–184. "The imaging properties of the metal superlens"

26. Yan Zhao, **Yun-Song Zhou（通信）**, Li-Ming Zhao, Huai-Yu Wang, **Opt. Comm.**381 (2016) 195–199. "The optical one-way transmission in helical metal subwavelength slit"

27. Qi Gao, **Yun-Song Zhou**, Hua Gao, and Huai-Yu Wang **AIP Advances,** 6, 105209 (2016). "Composite one-way transmission waveguide based on the curved metal slit and 1D photonic crystal"

28. H. Gao, **Y. S. Zhou,** Z. Y. Zheng, S. J. Chen, J. J. Dong, **Appl. Phys. B** 123 (2017)165. "Is the photonic crystal with a Dirac cone at its Γ point a real zero-index material?"

29. Chen Zhao,**Yun-Song Zhou**, Qi Gao,Yan Zhang, **Opt. Comm. 407**(2018)41–45 "The imaging properties of thecurved superlens" (www.elsevier.com/locate/optcom)

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