SHUYUN ZHOU（周树云）

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EDUCATION:

Ph.D. **Department of Physics, University of California, Berkeley,** CA, USA, 2007/12

B.S. **Department of Physics, Tsinghua University**, Beijing, China, 2002/07

EXPERIENCE:

2017/02-now **Full Professor, Department of Physics, Tsinghua University**

2012/04-2017/01 **Associate professor, Department of Physics, Tsinghua University**

2011/05-2012/04 **Project Scientist**, **Materials Sciences Division, Lawrence Berkeley National Lab**

2008/07-2011/04 **Advanced Light Source Postdoc Fellow**, **Lawrence Berkeley National Lab**

2008/01-2008/07 **Physics Postdoc, Materials Sciences Division, Lawrence Berkeley National Lab**

HONORS AND AWARDS:

2024 **Xplorer Prize（科学探索奖）**

2023 **First Prize of Beijing Science and Technology Award（北京市自然科学一等奖）**

2023 **Changjiang Distinguished Professor（长江学者特聘教授，续聘）**

2021 **Huang Kun Physics Prize, Chinese Physical Society（黄昆物理奖）**

2018 **Sir Martin Wood Prize for Low Temperature Physics（低温物理奖）**

2017 **L'Oreal-UNESCO Award for Women in Science, China（中国青年女科学家奖）**

2017 **Changjiang Distinguished Professor（长江学者特聘教授）**

2017 **National Science Fund for Distinguished Young Scholars（国家杰出青年科学基金）**

2017 **Youth Science and Technology Innovation Leader（中青年科技创新领军人才）**

2013 **Qiushi Outstanding Young Scholar Award（求是杰出青年学者奖）**

其它荣誉/奖励

2023 **"半导体黑磷的超快瞬时能带调控"入选 2023 年中关村论坛十项重大科技成果**

2023 "半导体黑磷的超快瞬时能带调控"入选 2023 年清华大学最受师生关注的年度亮点成果

2023 清华大学先进工作者

2022 Women in Ultrafast Science Global Award (by Ultrafast Science)

2022 研究成果“首次提出离子液体插层方法调控二硒化铌超导电性”入选稳态强磁场实验装置用户委员会评选的“2022 年度 SHMFF 十大亮点成果”

2022 清华大学先进集体（“低维量子材料的光—物质相互作用研究团队”，学术带头人）

2021 清华大学先进工作者

2019 中国青年五四奖章

2017 MRS Singapore ICON-2DMAT Young Scientist Award (YSA)

Service:

- **Elected Council Member**, Chinese Physical Society (**CPS**) 2023-2027 （中国物理学会理事）
- **Member**, Commission on Structure and Dynamics of Condensed Matter (C10), International Union of Pure and Applied Physics (**IUPAP**) 2018-2024
- **Program Committee**, Division of Condensed Matter Physics (DCMP), The association of Asia-Pacific Physical Societies (**AAPPS**) 2021-2024
- **Member**, **Commission on Semiconductor Physics**, Chinese Physical Society (**CPS**) 2020-now
- **Member**, **Commission on Low Temperature Physics**, Chinese Physical Society (**CPS**) 2020-now
- **AIP China Advisory Board** 2015-2019
- **Reviewer for journals**: *Nature/Nature Physics/Nature Materials/Nature Communications*/*Nature Reviews Physics*, *Science/Science Advances*, *Physical Review Letters/Physical Reviews X/Physical Review Materials/Physical Review B*, *Nano Letters/ACS Nano/Advanced Materials*, *npj Quantum Materials*
- **Editorial service**
  1. *Editorial Board, Newton (2025-now)*
  2. *Editorial Board, Ultrafast Science (2025-now)*
  3. *Editorial Board, Physical Review Materials (2024-now)*
  4. *Editorial Board, Chinese Physics Letters (2021-now)*
  5. *Editorial Board, Physics (2024-2028)*
  6. *Editorial Board, Science Bulletin (2018-2020)*
  7. *Editorial Board, Journal of Semiconductors (2016-2020)*
- **Review for Grants and Awards**
  1. *European Research Council (ERC), Consolidator Grant 2024*
  2. *DFG (German Research Foundation) 2019, 2020, 2021*
  3. *Research Grants Council (RGC) of Hong Kong 2019, 2023*
  4. *Young Scientist Prize (YSP), The Structure and Dynamics of Condensed Matter Physics (C20), IUPAP (2019-2024)*
  5. *Field Work Project, DOE Office of Basic Energy Sciences*
  6. *National Science Foundation of China (NSFC)*
  7. *Changjiang Distinguished Professor Program, MOE*

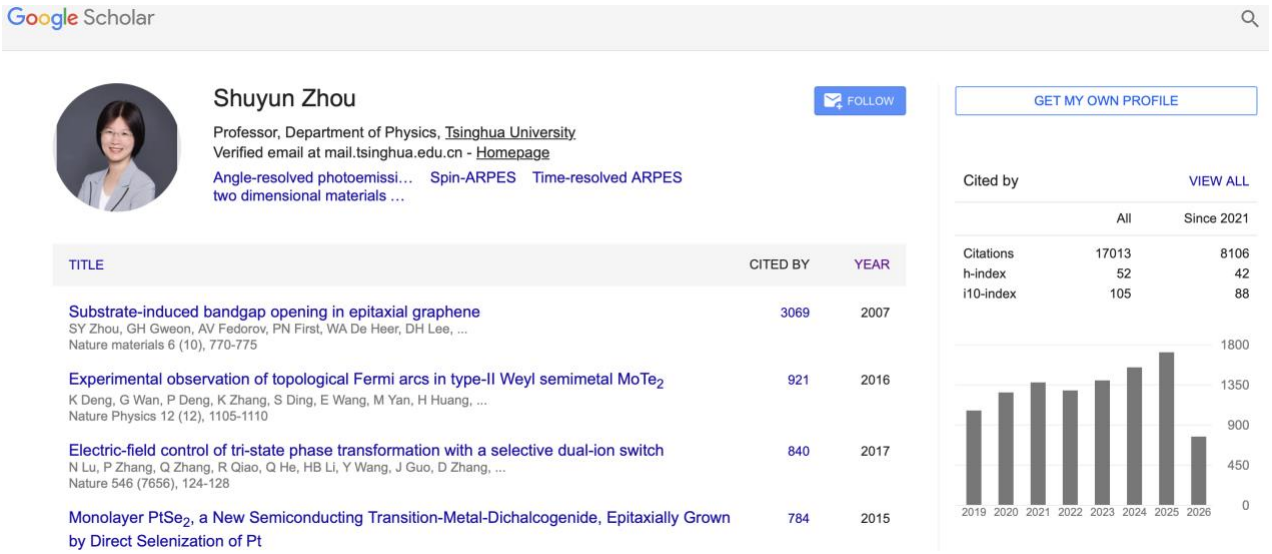
- **Organization of Conferences**

1. *Conference Chair, Light-induced emergent phenomena in low-dimensional materials (LIEF 2025)*
2. *Advisory Committee,* Conference of Condensed Matter Physics (2024)
3. *Conference Chair, Nan'ao Science Conference, Quantum materials and manipulation (2024)*
4. *Program Committee,* Conference of Condensed Matter Physics (2023)
5. *Conference Chair, Nan'ao Science Conference, Quantum materials and manipulation (2023)*
6. *Program Committee, Asia-Pacific Conference on Condensed Matter Physics 2023 (AC2MP2023)*
7. *Program Committee, Semiconductor Physics Conference (2023)*
8. *Conference Chair, Nan'ao Science Conference, Quantum materials and manipulation (2022)*
9. *Program Committee, Joint Workshop between Tsinghua, SUSTech & AIMR (2022)*
10. *Program Committee, 15th Asia Pacific Physics Conference (APPC15) 2022*
11. *Program Committee, Asia-Pacific Conference on Condensed Matter Physics 2021 (AC2MP2021)*
12. *Co-organizer, 2015 MRS Fall Meeting Symposium DDD: Lighting the Path towards Non-Equilibrium Structure-Property Relationships in Complex Materials*

Publications

>130 Publications with total citations > 17,000 times (Google Scholar) /14,000 times (Web of Science)

Including 41 papers in *Nature (4), Nature Materials (9), Nature Physics (6), Nature Energy (1) and Nature Communications (11), Nature Reviews Physics (1), Nature Reviews Methods Primers (1)*; *Physical Review Letters (12), PNAS (3)* and 2 book chapters



SELECTED PUBLICATIONS:

1. Fei Wang[+], Xuanxi Cai[+], Xiao Tang, Jinxi Lu, Wanying Chen, Tianshuang Sheng, Runfa Feng, Haoyuan Zhong, Hongyun Zhang, Pu Yu, Shuyun Zhou[*], "Observation of Floquet-induced gap in graphene", ***Nat. Mater.*** (2026) https://www.nature.com/articles/s41563-026-02549-y
2. Fei Wang, Xuanxi Cai, Wanying Chen, Jinxi Lu, Tianshuang Sheng, Xiao Tang, Jiansong Li, Hongyun Zhang, Shuyun Zhou, "Robust Floquet-induced gap in irradiated graphite", ***Chin. Phys. Lett.*** 43, 050705 (2026)
3. Hongyun Zhang[+], Jinxi Lu[+], Kai Liu[+], Yijie Wang[+], Fei Wang, Size Wu, Wanying Chen, Xuanxi Cai, Kenji Watanabe, Takashi Taniguchi, Jose Avila, Pavel Dudin, Matthew D. Watson, Alex Louat, Takafumi Sato, Pu Yu, Wenhui Duan, Zhida Song[*], Guorui Chen[*] and Shuyun Zhou[*], "Moiré enhanced flat band in rhombohedral graphene", ***Nat. Mater.*** 25, 566 (2026)
4. Fei Wang[+], Wanying Chen[+], Changhua Bao, Tianyun Lin, Haoyuan Zhong, Hongyun Zhang, Shuyu Zhou, "Light-field dressing of transient photo-excited states above the Fermi energy", ***Phys. Rev. Lett.*** 134, 146401 (2025)
5. Wanying Chen[+], Yiwen Yin[+], Fei Wang, Hongyun Zhang, Yixuan Ma, Haoyuan Zhong, Qian Li, Tianyun Lin, Changhua Bao, Hugen Yan, Junyi Zhu[*], and Shuyun Zhou[*], "Strongly enhanced mass anisotropy in monolayer phosphorene and field tunability", ***Phys. Rev. Lett.*** 135, 046401 (2025) *editor's suggestion*
6. Runfa Feng, Yang Zhang, Jiaheng Li, Qian Li, Changhua Bao, Hongyun Zhang, Wanying Chen, Xiao Tang, Ken Yaegashi, Katsuaki Sugawara, Takafumi Sato, Wenhui Duan, Pu Yu[*], and Shuyun Zhou[*], "Giant Rashba splitting in PtTe/$PtTe_2$ heterostructure", ***Nat. Commun.*** 16, 2667 (2025)
7. Hongyun Zhang[+], Qian Li[+], Michael G. Scheer, Renqi Wang, Chuyi Tuo, Nianlong Zou, Wanying Chen, Jiaheng Li, Xuanxi Cai, Changhua Bao, Ming-Rui Li, Ke Deng, Kenji Watanabe, Takashi Taniguchi, Mao Ye, Peizhe Tang, Yong Xu, Pu Yu, Jose Avila, Pavel Dudin, Jonathan D. Denlinger, Hong Yao, Biao Lian, Wenhui Duan, and Shuyun Zhou[*], "Correlated topological flat bands in rhombohedral graphite", ***PNAS*** 121, e2410714121 (2024)
8. Qian Li[+], Hongyun Zhang[+], Yijie Wang, Wanying Chen, Changhua Bao, Qinxin Liu, Tianyun Lin, Shuai Zhang, Haoxiong Zhang, Kenji Watanabe, Takashi Taniguchi, Jose Avila, Pavel Dudin, Qunyang Li, Pu Yu, Wenhui Duan, Zhida Song and Shuyun Zhou[*], "Spectroscopic evolution of flat band and the role of lattice relaxations in twisted bilayer graphene", ***Nat. Mater.*** 23, 1070 (2024)
9. Hongyun Zhang[+], Qian Li[+], Youngju Park, Yujin Jia, Wanying Chen, Jiaheng Li, Qinxin Liu, Changhua Bao, Nicolas Leconte, Shaohua Zhou, Yuan Wang, Kenji Watanabe, Takashi Taniguchi, Jose Avila, Pavel Dudin, Pu Yu, Hongming Weng, Wenhui Duan, Quansheng Wu, Jeil Jung & Shuyun Zhou[*], "Observation of dichotomic field-tunable electronic structure in twisted monolayer-bilayer graphene", ***Nat. Commun***. 15, 3737 (2024)
10. Changhua Bao, Michael Schuler, Teng Xiao, Fei Wang, Haoyuan Zhong, Tianyun Lin, Xuanxi Cai, Tianshuang Sheng, Xiao Tang, Hongyun Zhang, Zhiyuan Sun, Wenhui Duan, and Shuyun Zhou[*], "Manipulating the symmetry of photon-dressed electronic states", ***Nat. Commun.*** 15, 10533 (2024)
11. Haoyuan Zhong, Xuanxi Cai, Changhua Bao, Fei Wang, Tianyun Lin, Yudong Chen, Sainan Peng, Lin Tang, Chen Gu, Zhensheng Tao, Haoyuan Zhang, Shuyun Zhou[*], "HHG light source with polarization selectivity and sub-100 μm beam size for TrARPES", ***Ultrafast Science*** 4, 0063 (2024)
12. Shaohua Zhou[+], Changhua bao[+], Benshu Fan, Hui Zhou, Qixuan Gao, Haoyuan Zhong, Tianyun Lin, Hang Liu, Pu Yu, Peizhe Tang, Sheng Meng, Wenhui Duan and Shuyun Zhou[*], "Pseudospin-selective Floquet band engineering in black phosphorus", ***Nature*** 614, 75 (2023)

13. Shaohua Zhou[+], Changhua Bao[+], Benshu Fan[+], Wei Wang, Haoyuan Zhong, Hongyun Zhang, Peizhe Tang[*], Wenhui Duan and Shuyun Zhou[*], "Floquet engineering of black phosphorus upon below-gap pumping", ***Phys. Rev. Lett.*** 131, 116401 (2023) *editor's suggestion*

14. Fei Wang[+], Yang Zhang[+], Zhijie Wang[+], Haoxiong Zhang, Xi Wu, Changhua Bao, Jia Li[*], Pu Yu[*] and Shuyun Zhou[*], "Ionic liquid gating induced self-intercalation of transition metal chalcogenides", ***Nat. Commun.*** 14, 4945 (2023)

15. Haoxiong Zhang, Awabaikeli Rousuli, Kenan Zhang, Laipeng Luo, Chenguang Guo, Zuzhang Lin, Changhua Bao, Hongyun Zhang, Shengnan Xu, Runfa Feng, Shengchun Shen, Kun Zhao, Wei Yao, Yang Wu, Shuaihua Ji, Xi Chen, Qi-Kun Xue, Yong Xu, Wenhui Duan, Pu Yu & Shuyun Zhou[*], "Tailored Ising superconductivity in intercalated bulk $NbSe_2$ through dimensionality and carrier control", ***Nat. Phys.*** 18, 1425 (2022)

16. Changhua Bao, Peizhe Tang[*], Dong Sun[*] & Shuyun Zhou[*], "Light-induced emergent phenomena in 2D materials and topological materials", ***Nat. Rev. Phys.*** 4, 33 (2022)

17. Hongyun Zhang, Tommaso Pincelli, Chris Jozwiak, Takeshi Kondo, Ralph Ernstorfer, Takafumi Sato and Shuyun Zhou[*], "Angle-resolved photoemission spectroscopy", ***Nat. Rev. Methods Primers*** 2, 54 (2022)

18. Changhua Bao[*], Hongyun Zhang[*], Teng Zhang, Xi Wu, Laipeng Luo, Shaohua Zhou, Qian Li, Yanhui Hou, Wei Yao, Liwei Liu, Pu Yu, Jia Li, Wenhui Duan, Hong Yao, Yeliang Wang and Shuyun Zhou, "Experimental evidence of chiral symmetry breaking in Kekulé-ordered graphene", ***Phys. Rev. Lett.*** 126, 206804 (2021)

19. Haoxiong Zhang, Awabaikeli Rousuli, Shengchun Shen, Kenan Zhang, Chong Wang, Laipeng Luo, Jizhang Wang, Yang Wu, Yong Xu, Wenhui Duan, Hong Yao, Pu Yu[*] & Shuyun Zhou[*], "Enhancement of superconductivity in organic-inorganic hybrid topological materials", ***Sci. Bull.*** 65, 188 (2020)

20. Ke Deng, Mingzhe Yan, Chu-Ping Yu, Jiaheng Li, Xue Zhou, Kenan Zhang, Yuxin Zhao, Koji Miyamoto, Taichi Okuda, Wenhui Duan, Yang Wu, Xiaoyan Zhong and Shuyun Zhou, "Crossover from 2D metal to 3D Dirac semimetal in metallic $PtTe_2$ films with local Rashba effect", ***Sci. Bull.*** 34, 1044 (2019)

21. Wei Yao, Eryin Wang, Changhua Bao, Yiou Zhang, Kenan Zhang, Kejie Bao, Chun Kai Chan, Chaoyu Chen, Jose Avila, Maria C. Asensio, Junyi Zhu[*] and Shuyun Zhou[*], "Quasicrystalline 30° twisted bilayer graphene as an incommensurate superlattice with strong interlayer coupling", ***PNAS*** 115, 6928 (2018)

22. Kenan Zhang, Xiaoyu Liu, Haoxiong Zhang, Ke Deng, Mingzhe Yan, Mingtian Zheng, Eike F. Schwier, Kenya Shimada, Jonathan Denlinger, Yang Wu, Wenhui Duan and Shuyun Zhou[*], "Experimental evidence for charge density wave in the layered copper chalcogenide CuTe", ***Phys. Rev. Lett.*** 121, 206402 (2018)

23. Mingzhe Yan, Huaqing Huang, Kenan Zhang, Eryin Wang, Wei Yao, Ke Deng, Guoliang Wan, Hongyun Zhang, Masashi Arita, Haitao Yang, Zhe Sun, Hong Yao, Yang Wu[*], Shoushan Fan, Wenhui Duan[*] and Shuyun Zhou[*], "Lorentz-violating type-II Dirac fermions in transition metal dichalcogenide $PtTe_2$", ***Nat. Commun. 8,*** 257 (2017)

24. Wei Yao, Eryin Wang, Huaqing Huang, Ke Deng, Mingzhe Yan, Kenan Zhang, Koji Miyamoto, Taichi Okuda, Chaoxing Liu, Linfei Li, Yeliang Wang, Hongjun Gao, Chaoxing Liu, Wenhui Duan and Shuyun Zhou[*], "Direct observation of spin-layer locking by local Rashba effect in monolayer semiconducting $PtSe_2$", ***Nat. Commun.*** 8, 14216 (2017)

25. Ke Deng[+], Guoliang Wan[+], Peng Deng[+], Kenan Zhang, Shijie Ding, Eryin Wang, Mingzhe Yan, Huaqing Huang, Hongyun Zhang, Zhilin Xu, Jonathan Denlinger, Alexei Fedorov, Haitao Yang, Wenhui Duan, Hong Yao, Yang Wu[*], Shoushan Fan, Haijun Zhang, Xi Chen[*] and Shuyun Zhou[*],

"Experimental observation of topological Fermi arcs in type-II Weyl semimetal $MoTe_2$", ***Nat. Phys.*** 12, 1105 (2016)

26. Eryin Wang[+], Xiaobo Lu[+], Shijie Ding, Wei Yao, Mingzhe Yan, Guoliang Wan, Ke Deng, Shuopei Wang, Guorui Chen, Liguo Ma, Jeil Jung, Alexei V. Fedorov, Yuanbo Zhang, Guangyu Zhang and Shuyun Zhou[*], "Gaps induced by inversion symmetry breaking and second-generation Dirac cones in graphene/hexagonal boron nitride", ***Nat. Phys.*** 12, 1111 (2016)
27. Kenan Zhang, Changhua Bao, Qiangqiang Gu, Xiao Ren, Haoxiong Zhang, Ke Deng, Yang Wu[*], Yuan Li, Ji Feng and Shuyun Zhou[*], "Raman signatures of inversion symmetry breaking and structural phase transition in type-II Weyl semimetal $MoTe_2$", ***Nat. Commun.*** 7, 13552 (2016)
28. Yeliang Wang, Linfei Li, Wei Yao, Shiru Song, J.T. Sun, Jinbo Pan, Xiao Ren, Chen Li, Eiji Okunishi, Yu-Qi Wang, Eryin Wang, Yan Shao, Y.Y. Zhang, Hai-tao Yang, Eike F. Schwier, Hideaki Iwasawa, Kenya Shimada, Masaki Taniguchi, Chaohua Cheng, Shuyun Zhou[*], Shixuan Du[*], Stephen J. Pennycook, Sokrates T. Pantelides and Hong-Jun Gao[*], "Monolayer $PtSe_2$, a new semiconducting transition-metal-dichalcogenide, epitaxially grown by direct selenization of Pt", ***Nano Lett.*** 15, 4013 (2015)
29. Eryin Wang, Hao Ding, Alexei V. Fedorov, Wei Yao, Zhi Li, Yan-Feng Lv, Kun Zhao, Li-Guo Zhang, Zhixun Xu, John Schneeloch, Ruidan Zhong, Shuai-Hua Ji, Lili Wang, Ke He, Xucun Ma, Genda Gu, Hong Yao, Qi-Kun Xue, Xi Chen[*] and Shuyun Zhou[*], "Fully gapped topological surface states in Bi_2Se_3 films induced by a d-wave high-temperature superconductor", ***Nat. Phys.*** 9, 621 (2013)
30. S.Y. Zhou[*], Y. Zhu, M.C. Langner, Y.-D. Chuang[*], P. Yu, W.L. Yang, A.G. Cruz Gonzalez, M. Rini, N. Tahir, Y.-H. Chu, R. Ramesh, D.-H. Lee, Y. Tomioka, Y. Tokura, Z. Hussain and R.W. Schoenlein[*], "Ferromagnetic Enhancement of CE-type Spin Ordering in $(Pr,Ca)MnO_3$", ***Phys. Rev. Lett.*** 106, 186404 (2011)
31. S.Y. Zhou, D.A. Siegel, A.V. Fedorov and A. Lanzara, "Metal to insulator transition in epitaxial graphene induced by molecular doping", ***Phys. Rev. Lett.*** 101, 086402 (2008)
32. S.Y. Zhou, G.-H. Gweon, A.V. Fedorov, P.N. First, W.A. de Heer, D.-H. Lee, F. Guinea, A.H. Castro Neto and A. Lanzara, "Substrate-induced bandgap opening in epitaxial graphene", ***Nat. Mater.*** 6, 770 (2007)

    This paper was selected by Thomson Reuters "Essential Science Indicators" as "Fast Breaking Paper in the field of Materials Science" in 2008 August
33. S.Y. Zhou, D.A. Siegel, A.V. Fedorov and A. Lanzara, "Origin of the energy bandgap in epitaxial graphene - reply", ***Nat. Mater.*** 7, 259 (2008)
34. S.Y. Zhou, G.-H. Gweon, J. Graf, A.V. Fedorov, C.D. Spataru, R.D. Diehl, Y. Kopelevich, D.-H. Lee, S.G. Louie, A. Lanzara, "First direct observation of Dirac fermions in graphite", ***Nat. Phys.*** 2, 595 (2006)

FULL PUBLICATION LIST:

2026

1. Fei Wang[+], Xuanxi Cai[+], Xiao Tang, Jinxi Lu, Wanying Chen, Tianshuang Sheng, Runfa Feng, Haoyuan Zhong, Hongyun Zhang, Pu Yu, Shuyun Zhou[*], "Observation of Floquet-induced gap in graphene", ***Nat. Mater.*** *in press* (2026)
2. Xuanxi Cai, Wanying Chen, Jinxi Lu, Tianshuang Sheng, Xiao Tang, Jiansong Li, Hongyun Zhang, Shuyun Zhou, "Robust Floquet-induced gap in irradiated graphite", ***Chin. Phys. Lett.*** 43, 050705 (2026)

3. Hongyun Zhang[+], Jinxi Lu[+], Kai Liu[+], Yijie Wang[+], Fei Wang, Size Wu, Wanying Chen, Xuanxi Cai, Kenji Watanabe, Takashi Taniguchi, Jose Avila, Pavel Dudin, Matthew D. Watson, Alex Louat, Takafumi Sato, Pu Yu, Wenhui Duan, Zhida Song[*], Guorui Chen[*] and Shuyun Zhou[*], "Moiré enhanced flat band in rhombohedral graphene", ***Nat. Mater.*** 25, 566 (2026)

4. Hongyun Zhang & Shuyun Zhou, "Heavy and light electrons coexist in twisted graphene", ***Nature*** 653, 31 (2026). (News & Views)

5. Yu Zhou, Xinyu Shu, Yang Zhang, Zhiwei Liu, Liangyang Liu, Kunhong Xiao, Shengchun Shen, Sijie Wu, Cong Li, Jianbing Zhang, Yingjie Lyu, Yongshun Wu, Meng Wang, Di Yi, Tianxiang Nan, Jiadong Zang, Luyi Yang, Shuyun Zhou, Hanghui Chen, and Pu Yu, "Geometry-driven polar antiferromagnetic metallicity in a double-layered perovskite cobaltate", ***Nat. Mater.*** 25, 231 (2026)

6. Pei Ouyang, Jiawei Yu, Qian Li, Guihao Jia, Yuyang Wang, Kebin Xiao, Hongyun Zhang, Zhiqiang Hu, Pierre A. Pantaleón, Zhen Zhan, Shuyun Zhou, Francisco Guinea, Qi-Kun Xue, and Wei Li, "Structural and electronic signatures of strain-tunable marginally twisted bilayer graphene", ***Nat. Sci. Rev.*** 13: nwaf568 (2026)

7. Jiawei Yu, Guihao Jia, Qian Li, Yuyang Wang, Kebin Xiao, Yongkang Ju, Hongyun Zhang, Zhiqiang Hu, Yunkai Guo, Biao Lian, Peizhe Tang, Pierre Anthony Pantaleón, Shuyun Zhou, Francisco Guinea, Qi-Kun Xue, and Wei Li, "Strain and twist angle driven electronic structure evolution in twisted bilayer graphene", ***Rep. Prog. Phys.*** 89, 048001 (2026)

8. Xuanxi Cai[+], Changhua Bao[+], Benshu Fan[+], Haoyuan Zhong, Shaohua Zhou, Fei Wang, Tianyun Lin, Hongyun Zhang, Pu Yu, Peizhe Tang, Wenhui Duan, and Shuyun Zhou, "Occupation dynamics of Floquet-Volkov States and Spectral Sum Rule", ***Nano Lett.*** *in press* (2026)

9. Kai Liu, Yating Sha, Bo Yin, Hongyun Zhang, Jinxi Lu, Shuhan Liu, Size Wu, Yulu Ren, Zhongxun Guo, Jingjing Gao, Ming Tian, Neng Wan, Kenji Watanabe, Takashi Taniguchi, Bingbing Tong, Guangtong Liu, Li Lu, Yuanbo Zhang, Weidong Luo, Zhiwen Shi, Shuyun Zhou, Quansheng Wu, Guorui Chen, "Intrinsic layer polarization and multi-flat band transport in non-centrosymmetric mixed-stacked multilayer graphene", ***Nano Lett.*** *in press* (2026)

2025

1. Fei Wang[+], Wanying Chen[+], Changhua Bao, Tianyun Lin, Haoyuan Zhong, Hongyun Zhang, Shuyu Zhou[*], "Light-field dressing of transient photo-excited states above the Fermi energy", ***Phys. Rev. Lett.*** 134, 146401 (2025)

2. Wanying Chen[+], Yiwen Yin[+], Fei Wang, Hongyun Zhang, Yixuan Ma, Haoyuan Zhong, Qian Li, Tianyun Lin, Changhua Bao, Hugen Yan, Junyi Zhu[*], and Shuyun Zhou[*], "Strongly enhanced mass anisotropy in monolayer phosphorene and field tunability", ***Phys. Rev. Lett.*** 135, 046401 (2025)

3. Runfa Feng, Yang Zhang, Jiaheng Li, Qian Li, Changhua Bao, Hongyun Zhang, Wanying Chen, Xiao Tang, Ken Yaegashi, Katsuaki Sugawara, Takafumi Sato, Wenhui Duan, Pu Yu[*], and Shuyun Zhou[*], "Giant Rashba splitting in PtTe/$PtTe_2$ heterostructure", ***Nat. Commun.*** 16, 2667 (2025)

4. Changhua Bao, Haoyuan Zhong, Benshu Fan, Xuanxi Cai, Fei Wang, Shaohua Zhou, Tianyun Lin, Hongyun Zhang, Pu Yu, Peizhe Tang[*], Wenhui Duan, and Shuyun Zhou[*], "Floquet-Volkov interference in a semiconductor", ***Phys. Rev. B*** 111, L081106 (2025)

5. Benshu Fan, Umberto De Giovannini, Hannes Hubener, Shuyun Zhou, Wenhui Duan, Angle Rubio, Peizhe Tang, "Floquet optical selection rules in black phosphorus", ***Sci. Adv.*** 11, eadw2744 (2025)

6. Di Tian, Haotian Zheng, Zewei Huang, Sijie Wu, Pengcheng Li, Cong Li, Jianbing Zhang, Xinyu Shu, Jinling Zhou, Yang Liu, Meng Wang, Di Yi, Tianxiang Nan, Zhen Chen, Qing He, Huaqiang Wu, Shuyun Zhou, Weidong Luo, and Pu Yu, "Hydrogenated $PdCoO_2$: A Layered Metallic Oxide Exhibiting Robust Room-Temperature Ferromagnetism", ***Phys. Rev. X*** 15, 041030 (2025)

7. Hongyun Zhang[+], Yulu Qin[+], Tianshuang Sheng, Haoyuan Zhong, Xuanxi Cai, Tianyun Lin, Changhua Bao, Rui Wang, Guowei Lu, Qihuang Gong, Wenhui Duan, Yuanquan Liu and Shuyun Zhou[*], "Spatial-temporal imaging electronic dynamics in few-layer graphene", ***2D Mater.*** 12, 011002 (2025)

8. Wanying Chen[+], Haoyuan Zhong[+], Changhua Bao, Fei Wang, Xuanxi Cai, Chenxia Yun, Hongyun Zhang, Hao Teng, Zhiyi Wei, and Shuyun Zhou[*], "Revealing light-induced charge density wave melting and carrier redistribution in 1T-$TiSe_2$", ***Chin. Phys. Lett.*** 42, 017101 (2025)

2024

9. Qian Li[+], Hongyun Zhang[+], Yijie Wang, Wanying Chen, Changhua Bao, Qinxin Liu, Tianyun Lin, Shuai Zhang, Haoxiong Zhang, Kenji Watanabe, Takashi Taniguchi, Jose Avila, Pavel Dudin, Qunyang Li, Pu Yu, Wenhui Duan, Zhida Song and Shuyun Zhou[*], "Evolution of flat band and the role of lattice relaxations in twisted bilayer graphene", ***Nat. Mater.*** 23, 1070 (2024)

10. Hongyun Zhang[+], Qian Li[+], Youngju Park, Yujin Jia, Wanying Chen, Jiaheng Li, Qinxin Liu, Changhua Bao, Nicolas Leconte, Shaohua Zhou, Yuan Wang, Kenji Watanabe, Takashi Taniguchi, Jose Avila, Pavel Dudin, Pu Yu, Hongming Weng, Wenhui Duan, Quansheng Wu, Jeil Jung & Shuyun Zhou[*], "Observation of dichotomic field-tunable electronic structure in twisted monolayer-bilayer graphene", ***Nat. Commun***. 15, 3737 (2024)

11. Hongyun Zhang[+], Qian Li[+], Michael G. Scheer, Renqi Wang, Chuyi Tuo, Nianlong Zou, Wanying Chen, Jiaheng Li, Xuanxi Cai, Changhua Bao, Ming-Rui Li, Ke Deng, Kenji Watanabe, Takashi Taniguchi, Mao Ye, Peizhe Tang, Yong Xu, Pu Yu, Jose Avila, Pavel Dudin, Jonathan D. Denlinger, Hong Yao, Biao Lian, Wenhui Duan, and Shuyun Zhou[*], "Correlated topological flat bands in rhombohedral graphite", ***PNAS*** 121, e2410714121 (2024)

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Book chapters:

1. S.Y. Zhou and A. Lanzara, "The electronic structure of epitaxial graphene – a view from angle-resolved photoemission spectroscopy" in Oxford Handbook of Nanoscience and Technology: Frontiers and Advances. Narlikar, A.V. & Fu, Y.Y. Eds. (Oxford Univ. Press, Oxford, 2009)
2. A. Lanzara, G.-H. Gweon, S.Y. Zhou, "Lattice dynamics and paired electrons in high temperature superconductors" in New Challenges in Superconductivity: Experimental Advances and Emerging Theories, NATO Science Series II – Mathematics, Physics and Chemistry. Ashkenazi J. *et al.* EDs. (Springer, Netherlands, 2005)

PLENARY TALKS

1. "Floquet engineering of quantum materials", ***plenary talk***, 16th Asia Pacific Physics Conference (APPC16), Haikou, China, 2025/10/22
2. "Engineering topological flat bands in rhombohedral graphene", ***plenary talk***, Conference on Strongly Correlated Electron System 2025 (SCES 2025), Montreal, Canada, 2025/07/11
3. "Floquet engineering of quantum materials", ***plenary talk***, 36th International Conference on the Physics of Semiconductors (ICPS2024), Ottawa, Canada, 2024/07/27
4. "Floquet engineering of a model semiconductor", ***plenary talk***, Conference of Condensed Matter Physics 2023, Liyang, China, 2023/08/11

INVITED TALKS, COLLOQUIUM and SEMINARS (2016-now)

1. "Floquet engineering of quantum materials: from semiconductors to semimetals", ***invited talk***, DPG March meeting, Symposium "Designing quantum materials with light: from Floquet to cavity engineering", Dresden, Germany, 2026/03/09
2. "Light field engineering of 2D materials", ***invited talk***, The 14th International Conference on Advanced Materials and Devices (ICAMD2025), Busan, Korea, 2025/12/11
3. "Engineering topological flat bands in rhombohedral graphene", ***invited talk***, Greater Bay Area Event Week of the International Year of Quantum Science and Technology & The 4th Greater Bay Area Science Forum, Shenzhen, China, 2025/11/22
4. "Engineering Quantum Materials using moiré potentials and light fields" (organized by *Science*), ***invited talk***, International Conference on the Fundamentals of Quantum Matter, Beijing, China, 2025/11/17

5. "Engineering 2D Materials and Heterostructures: from Superconductivity to Flat Bands", ***Chemistry Seminar***, National University of Singapore, Singapore, 2025/09/10
6. "Floquet engineering of quantum materials", ***IAS Frontiers Seminar: Quantum Horizons***, Nanyang Technological University, Singapore, 2025/09/08
7. "Floquet Engineering of Quantum Materials", ***invited talk***, CEMS Symposium on "Emergent Quantum Materials" 2025, Tokyo, Japan, 2025/05/21
8. "Engineering topological flat bands in rhombohedral graphene/graphite", ***invited talk***, Gordon Research Conference on Topological and Correlated Matter, Barcelona, Spain, 2025/05/12
9. "Engineering flat bands in twisted/stacked graphene layers", ***Physics Colloquium***, Chinese University of Hong Kong, China, 2025/04/11
10. "Floquet engineering of black phosphorus", ***invited talk***, ISSP workshop on Topological nonlinear optics in quantum materials (TOPONL) 2025, Tokyo, Japan, 2025/02/20
11. "Floquet engineering of black phosphorus", ***Condensed Matter Physics Seminar***, Princeton University, Princeton, USA, 2024/12/06
12. "Engineering of flat bands in graphene-based materials", ***invited talk***, 2024 MRS Fall Meeting, Boston, USA, 2024/12/04
13. "Floquet engineering of black phosphorus", ***SLAC Photon Science Seminar***, Menlo Park, USA, 2024/12/02
14. "Correlated topological surface flat bands in rhombohedral graphite", ***invited talk***, ICTP Conference on Advances in Topological Condensed Matter, Trieste, Italy, 2024/11/12
15. "Floquet engineering of black phosphorus", ***invited talk***, The 2024 China-Singapore Joint Symposium on Research Frontiers in Physics, Zhejiang, China, 2024/09/23
16. "Floquet engineering of black phosphorus", ***invited talk***, 5th Berkeley Excited States Conference (BESC2024), Berkeley, USA, 2024/08/15
17. "Engineering the electronic structure and symmetry of black phosphorus in the ultrafast timescale", ***invited talk***, Conference of Condensed Matter Physics (CCMP) 2024, Liyang, China, 2024/08/07
18. "Correlated topological surface flat bands (TFSB) in a spiral Dirac nodal line (SDNL) semimetal", ***invited talk***, Two-Dimensional Correlated Physics, Beijing, China, 2024/07/31
19. "Correlated topological surface flat bands in an ideal spiral Dirac nodal line semimetal", ***invited talk***, International Workshop on Topological Quantum Transport, Huangshan, China, 2024/06/17
20. "Floquet engineering of two-dimensional materials by time-periodic light field", Ultrafast Surface Dynamics 13, ***invited talk***, Göttingen, Germany, 2024/05/27
21. "Engineering flat bands in twisted bilayer graphene", ***invited talk***, 6th European Workshop on Epitaxial Graphene and 2D Materials, Trieste, Italy, 2024/05/16
22. "Floquet engineering of black phosphorus upon below-gap pumping", ***invited talk***, focus session "Light-induced phases of matter: Floquet manipulation and coherent control", APS March Meeting 2024, Minneapolis, USA, 2024/03/08

23. "Controlling quantum materials with time-periodic drive", ***invited talk***, Invited symposium "Light-induced phases of matter: Floquet manipulation and coherent control", APS March Meeting 2024, Minneapolis, USA, 2024/03/03
24. "Floquet engineering of two-dimensional materials by time-periodic light field", ***invited talk***, 2023 Materials Research Society (MRS) Fall Meeting, Boston, USA, 2023/11/28
25. "Controlling quantum materials with time-periodic drive", ***invited talk***, International Conference on Magnetism and Superconductivity in Topological Matter (organized by *Science*), Beijing, China, 2023/11/11
26. "Manipulation of two-dimensional materials by time-periodic light field", ***Condensed Matter Physics Seminar***, University of Texas Austin, USA, 2023/11/09
27. "Manipulation of two-dimensional materials by time-periodic light field", ***invited talk***, Workshop on "Topological phases and strong correlations in many-body systems and light-matter hybrids", Harvard University, USA, 2023/11/06
28. "Floquet Engineering of a Model Semiconductor", ***invited talk***, 10th International Workshop on Strong Correlations and Angle-resolved Photoemission Spectroscopy (CORPES 2023), Beijing, China, 2023/09/15
29. "Floquet engineering of a model semiconductor", ***invited talk***, 15th International Conference on Electronic Spectroscopy and Structure (ICESS 2023), Oulu, Finland, 2023/08/21
30. "Floquet engineering of quantum materials – Black phosphorus as an example", ***invited talk***, Nonequilibrium dynamics and light-induced states in quantum materials, TIQM (Thouless Institute for Quantum Matter) workshop, Seattle, USA, 2023/08/06
31. "Ultrafast dynamics and Floquet engineering of quantum materials", ***invited talk***, International conference on strongly correlated electron system (ISCES) 2023, Incheon, Korea, 2023/07/06
32. "Floquet engineering of a model semiconductor", ***Condensed Matter Physics Seminar***, University of Göttingen, Germany, 2023/06/22
33. "Floquet engineering of a model semiconductor", ***Spin + X distinguished lecture***, RPTU, Germany, 2023/06/19
34. "Ultrafast dynamics and Floquet engineering enabled by ultrafast time- and angle-resolved photoemission spectroscopy", ***Condensed Matter Physics Seminar***, Paris-Saclay University, Paris, France, 2023/06/16
35. "Enhanced or tailored superconductivity in 2D materials via ionic liquid cation intercalation", ***invited talk***, 2023 Materials Research Society (MRS) Spring Meeting, USA, 2023/04/27
36. "Ultrafast dynamics and Floquet engineering enabled by ultrafast time- and angle-resolved photoemission spectroscopy", ***invited talk***, 2023 Materials Research Society (MRS) Spring Meeting, USA, 2023/04/25
37. "Floquet band engineering of Quantum materials - Black phosphorus as an example", ***invited talk***, A3 foresight meeting, Nanjing, China, 2023/2/17

38. "Ultrafast dynamics and Floquet engineering of quantum materials enabled by ultrafast time- and angle-resolved photoemission spectroscopy", ***invited talk***, Photonics Asia 2022 (online), 2022/11/29
39. "Ultrafast dynamics and Floquet engineering of quantum materials", ***invited talk***, International Conference on Nonequilibrium and Ultrafast Quantum States, Beijing, China, 2022/11/15
40. "Sub-100 fs TrARPES with tunable VUV probe and Ultrafast dynamics of 3D Dirac semimetal", ***invited talk***, The 4th International Workshop on Quantum Matter - Quantum Many-body Dynamics, Shanghai Jiaotong University, China, 2022/08/26
41. "Chiral symmetry breaking, extended flat band and ultrafast dynamics in Kekulé-ordered graphene", ***invited talk***, The 20th International Symposium on the Physics of semiconductors and Applications (ISPSA2022), Jeju, Korea, 2022/07/20
42. "Ultrafast dynamics in Kekulé-ordered graphene", ***ICQM weekly seminar***, Peking University, China, 2022/05/11
43. "Chiral symmetry breaking, extended flat band and ultrafast dynamics of a Kekulé-ordered graphene", ***invited talk***, The 12th International Conference on Advanced Materials and Devices (ICAMD 2021): Surfaces and Interfaces, Jeju, Korea, 2021/12/10
44. "Light-tunable surface state and hybridization gap in $MnBi_8Te_{13}$ by μ-TrARPES", ***invited talk***, Nonequilibrium Phenomena in Quantum Materials, Beijing, China, 2021/04/10
45. "Plasmaron dispersion and Effective fine-structure constant of graphene/BN heterostructure", ***invited talk***, 7th International Workshop on 2D Materials, online, 2021/02/18
46. "Enhanced superconductivity in organic-inorganic hybrid materials", ***Condensed Matter Physics seminar***, Nanyang Technological University, 2020/12/16
47. "Enhanced superconductivity in organic-inorganic hybrid materials", ***invited talk***, FLEET2020 annual workshop, Australia, 2020/12/11
48. "Chiral symmetry breaking induced gap and flat band in a graphene Kekule lattice", ***invited talk***, Nature Conference "2D materials: visions of future research and applications", Xi'an, China, 2019/11/08
49. "Enhanced superconductivity in organic-inorganic hybrid topological materials", ***invited talk***, Korean Physical Society (KPS) Fall Meeting 2019, Gwangju, Korea, 2019/10/24
50. "Enhanced superconductivity in organic-inorganic hybrid topological materials", ***invited talk***, Recent Progress in Graphene & 2D Materials Research – RPGR2019, Matsue, Japan, 2019/10/10
51. "Laser induced band gap engineering revealed by ultrafast time- and angle-resolved photoemission spectroscopy", ***invited talk***, The 14th Femtochemistry Conference – Dynamics of the Complexity in Chemistry, Biology, and Physics, Shanghai, China 2019/07/29
52. "Band structure engineering of monochalcogenides and van der Waals heterostructures", ***invited talk***, AVS Taiwan Chapter: Emergent phenomena and related physics in novel van der Waals heterostructures, Hsinchu, Taiwan, China, 2019/01/24

53. “Van der Waals heterostructures: from commensurate superlattice to incommensurate quasicrystal”, ***invited talk***, the 4th International Conference on Two-dimensional Materials and Technologies, Melbourne, Australia, 2018/12/11
54. “Van der Waals heterostructures: from commensurate superlattice to incommensurate quasicrystal”, ***invited talk***, A3 conference - First International Workshop on 2D materials, Tokyo, Japan, 2018/11/15
55. “Two-dimensional materials and heterostructures for new topological phases and tailored electronic structures”, ***invited talk***, International conference on the physics of semiconductors (ICPS2018), Montpellier, France, 2018/07/29
56. “Band structure engineering of quasicrystalline 30 degree twisted bilayer graphene”, ***invited talk***, Tohoku-Tsinghua joint workshop on materials and spintronics sciences, Sendai, Japan, 2018/07/26
57. “Band structure engineering of quasi-crystalline incommensurate vs. commensurate twisted bilayer graphene”, ***invited talk***, Workshop on electron correlation and superconductivity in graphene and related materials, Beijing, China, 2018/07/10
58. “Van der Waals heterostructures for tailored electronic structures”, ***invited talk***, 2018 International Conference on Emergent Phenomena in Quantum Materials, Shanghai, China, 2018/06/01
59. “Band structure engineering of van der Waals heterostructures”, ***invited talk***, The 1st Silk Road International Conference on Two-Dimensional Material Science and Technology, Xi’an, China, 2018/05/26
60. “Two-dimensional materials and heterostructures for new topological phases and tailored electronic structures”, ***invited talk***, 7th Swiss-Sino Workshop, Paul Sherrer Institute (PSI), Switzerland, 2018/05/09
61. “Two-dimensional materials and heterostructures for new topological phases and tailored electronic structures”, ***invited talk***, 2018 International Forum on Graphene, Shenzhen, China, 2018/04/13
62. “Electronic Structure of 2D Materials Revealed by ARPES and Nano-ARPES”, ***invited talk***, 2018 Materials Research Society (MRS) Spring Meeting, Phoenix, USA, 2018/04/03
63. “Electronic Structure of 2D Materials Revealed by ARPES and Nano-ARPES”, ***invited talk***, 2018 Joint meeting of DPG and EPS Condensed Matter Divisions, Berlin, Germany, 2018/03/16
64. “Electronic structure of atomically thin transition metal dichalcogenides using Nano-ARPES”, ***invited talk***, UK-China conference “Grand Challenges and Solutions in 2D Materials Science and Technologies, Manchester, United Kingdom, 2018/01/24
65. “2D materials and hetero-structures for new topological phases and tailored electronic structures”, ***Physics Colloquium***, Chinese University of Hong Kong, China, 2018/01/19
66. “Electronic and Spin Structure of Novel Transition Metal Dichalcogenides”, ***keynote talk,*** The 9th Joint Meeting of Chinese Physicists Worldwide: International Conference on Physics & Education "New opportunities in Physics" (OCPA9), Beijing, China, 2017/07/17.

67. "Electronic and spin structure of $PtSe_2$ and $PtTe_2$ - from bulk crystal to monolayer thin film", ***invited talk***, 3rd International Conference on 2D Materials and Technology, Singapore, 2017/12/11
68. "Ultrafast electronic dynamics of 2D material revealed by time- and angle-resolved photoemission spectroscopy", ***invited talk***, International-workshop about PEEM applications, Beijing, China, 2017/11/22
69. "Time- and Angle-resolved photoemission spectroscopic studies of topological materials", ***invited talk***, International workshop on strong correlations and angle-resolved photoemission spectroscopy (CORPES17), Hiroshima, Japan, 2017/07/04
70. "New topological phases in transition metal dichalcogenides", ***invited talk***, Gordon Research Conference "Topological and Correlated Matter", Hong Kong, China, 2017/06/19
71. "Ultrafast electronic dynamics of topological material revealed by time- and angle-resolved photoemission spectroscopy", ***invited talk***, Femtosecond Electron Imaging and Spectroscopy Workshop 2017, Shanghai, China, 2017/06/02
72. "New topological phases in transition metal dichalcogenides", ***invited talk***, 2nd Tsinghua-UTokyo joint Symposium - Materials and Physics, Tokyo, Japan, 2017/04/14
73. "New topological phases in transition metal dichalcogenides", ***invited talk***, 15th low temperature conference of China, Guangdong, China, 2016/11/15
74. "New topological phases in transition metal dichalcogenides", ***290K Seminar***, University of California, Berkeley, USA, 2016/11/07
75. "Two-dimensional materials and heterostructures for new topological phases and tailored electronic structure", ***invited talk***, RIKEN-Tsinghua workshop, 2016/10/19
76. "Electronic Structure Investigation of Two-Dimensional Materials and Van Der Waals Heterostructure", ***invited talk***, XXV International Materials Research Congress 2016, Cancun, Mexica, 2016/08/15
77. "Electronic Structure Investigation of Two-Dimensional Materials and Van Der Waals Heterostructure", ***invited talk***, International Union of materials research societies - International Conference on Electronic Materials, Singapore, 2016/07/07
78. "ARPES studies of graphene/h-BN van der Waals heterostructure", ***invited talk***, International Symposium on Physics and Device Applications of Two-dimensional Materials, Fudan University, Shanghai, China, 2016/06/30
79. "Experimental realization of Lorentz violating type-II Weyl semimetal in $MoTe_2$", ***ICQM seminar***, Peking University, China, 2016/05/11
80. "Direct Observation of Helical Spin Texture in Centrosymmetric Monolayer $PtSe_2$ Film", ***invited talk***, UTokyo-Tsinghua Joint Symposium 2016, Tokyo, Japan, 2016/03/10