# Xiaoxiong Liu

*Curriculum Vitae*

## General


Born 2nd Feb 1993

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## Education

2019–current **Ph.D. in Condensed Matter Physics**, *University of Zurich*, Switzerland.
Supervisor: Stepan S. Tsirkin

2016–2019 **M.Sc. in Theoretical Physics**, *Lanzhou University*, China.
Supervisor: Jianbo Deng

2012–2016 **B.Sc. in Physics**, *Lanzhou University*, China.
Supervisor: Jianbo Deng

## Awards

2018 National Scholarship of Graduated Student.

## Development of Scientific Software (open source)

### Author of: symmetrize wann matrix

This code aimed to symmetrize matrix elements from Wannier90. E.g., Hamiltonian and position elements.
Code available at: https://github.com/Liu-Xiaoxiong/symmetrize_wann_matrix

### Co-Developer of: WannierBerri

An advanced tool for Wannier interpolation and integration of quantities related to Berry curvature and magnetic moment. http://wannier-berri.org
Code available at: https://github.com/wannier-berri/wannier-berri

## Publications

1. Electrical magnetochiral anisotropy in trigonal tellurium from first principles
   Xiaoxiong Liu, Ivo Souza, Stepan S. Tsirkin, **arXiv e-prints**, arXiv:2303.10164
2. Covariant derivatives of Berry-type quantities: Application to nonlinear transport
   Xiaoxiong Liu, Stepan S. Tsirkin, Ivo Souza, **arXiv e-prints**, arXiv:2303.10129
3. Origin of spin reorientation and intrinsic anomalous Hall effect in the kagome ferrimagnet TbMn6Sn6
   DC Jones, S Das, H Bhandari, Xiaoxiong Liu, P Siegfried, MP Ghimire, SS Tsirkin, II Mazin, NJ Ghimire, **arXiv e-prints**, arXiv: 2203.17246
4. Emergent Edge Modes in Shifted Quasi-One-Dimensional Charge Density Waves
   SB Zhang, Xiaoxiong Liu, MS Hossain, JX Yin, MZ Hasan, T Neupert, **Physical Review Letters** 130, 106203, (2023)
5. Triple nodal points characterized by their nodal-line structure in all magnetic space groups
   PM Lenggenhager, Xiaoxiong Liu, T Neupert, T Bzdušek, **Physical Review B** 106 (8), 085128, (2022)
6. Universal higher-order bulk-boundary correspondence of triple nodal points
   PM Lenggenhager, Xiaoxiong Liu, T Neupert, T Bzdušek, **Physical Review B** 106 (8), 085129, (2022)
7. Intriguing magnetism of the topological kagome magnet $TbMn_6Sn_6$
   C Mielke III, Wenlong Ma, V Pomjakushin, O Zaharko, Xiaoxiong Liu, J-X Yin, SS Tsirkin, TA Cochran, M Medarde, V Poree, D Das, CN Wang, J Chang, T Neupert, A Amato, S Jia, MZ Hasan, H Luetkens, Z Guguchia, **Communications Physics** 5 (1), 1-9 (2022)
8. Signatures of Weyl fermion annihilation in a correlated kagome magnet
   I. Belopolski, T. A. Cochran, Xiaoxiong Liu, Z. Cheng, X. Yang, Z. Guguchia, S. S. Tsirkin, J. Yin, P. Vir, G. S. Thakur, S. Zhang, J. Zhang, K. Kaznatcheev, G. Cheng, G. Chang, D. Multer, N. Shumiya, M. Litskevich, E. Vescovo, T. K. Kim, C. Cacho, N. Yao, C. Felser, T. Neupert, M. Z. Hasan, **Physical Review letters** 127 (25), 256403, (2021)
9. Unconventional chiral charge order in kagome superconductor KV3Sb5
   Y. Jiang, J. Yin, M. M. Denner, N. Shumiya, B. R. Ortiz, G. Xu, Z. Guguchia, J. He, M. S. Hossain, Xiaoxiong Liu, J. Ruff, L. Kautzsch, S. Zhang, G. Chang, I. Belopolski, Q. Zhang, T. A. Cochran, D. Multer, M. Litskevich, Z. Cheng, X. Yang, Z. Wang, R. Thomale, T. Neupert, S. D. Wilson, M. Z. Hasan, **Nature Materials** 20 (10), 1353-1357, (2021)
10. From triple-point materials to multiband nodal links
    PM Lenggenhager, Xiaoxiong Liu, SS Tsirkin, T Neupert, T Bzdušek, **Physical Review B** 103 (12), L121101, (2021)