



Christian Heide

Postdoctoral Scholar, Photon Science, SLAC

Bio

STANFORD ADVISORS

- David Reis, Postdoctoral Faculty Sponsor

LINKS

- My personal site: <https://www.christian-heide.com/>

Research & Scholarship

CURRENT RESEARCH AND SCHOLARLY INTERESTS

My current research focuses on light-matter interactions on extremely fast time scales (femto- and attoseconds). This includes ultrafast current injection and the generation of high harmonics in two-dimensional materials like TMDCs and layered heterostructures.

Publications

PUBLICATIONS

- **High-harmonic generation from artificially stacked 2D crystals** *NANOPHOTONICS*
Heide, C., Kobayashi, Y., Johnson, A. C., Heinz, T. F., Reis, D. A., Liu, F., Ghimire, S.
2023
- **Floquet engineering of strongly driven excitons in monolayer tungsten disulfide** *NATURE PHYSICS*
Kobayashi, Y., Heide, C., Johnson, A. C., Tiwari, V., Liu, F., Reis, D. A., Heinz, T. F., Ghimire, S.
2023
- **Intense infrared lasers for strong-field science** *ADVANCES IN OPTICS AND PHOTONICS*
Chang, Z., Fang, L., Fedorov, V., Geiger, C., Ghimire, S., Heide, C., Ishii, N., Itatani, J., Joshi, C., Kobayashi, Y., Kumar, P., Marra, A., Mirov, et al
2022; 14 (4): 652-782
- **In-Situ Nanoscale Focusing of Extreme Ultraviolet Solid-State High Harmonics** *PHYSICAL REVIEW X*
Korobenko, A., Rashid, S., Heide, C., Naumov, A., Reis, D. A., Berini, P., Corkum, P. B., Vampa, G.
2022; 12 (4)
- **Probing topological phase transitions using high-harmonic generation** *NATURE PHOTONICS*
Heide, C., Kobayashi, Y., Baykusheva, D. R., Jain, D., Sobota, J. A., Hashimoto, M., Kirchmann, P. S., Oh, S., Heinz, T. F., Reis, D. A., Ghimire, S.
2022
- **Probing electron-hole coherence in strongly driven 2D materials using high-harmonic generation** *OPTICA*
Heide, C., Kobayashi, Y., Johnson, A. C., Liu, F., Heinz, T. F., Reis, D. A., Ghimire, S.
2022; 9 (5): 512-516

- **Light-field control of real and virtual charge carriers.** *Nature*
Boolakee, T., Heide, C., Garzon-Ramirez, A., Weber, H. B., Franco, I., Hommelhoff, P.
2022; 605 (7909): 251-255
- **Electronic Coherence and Coherent Dephasing in the Optical Control of Electrons in Graphene.** *Nano letters*
Heide, C., Eckstein, T., Boolakee, T., Gerner, C., Weber, H. B., Franco, I., Hommelhoff, P.
2021
- **Optical current generation in graphene: CEP control vs. $\omega + 2\omega$ control** *NANOPHOTONICS*
Heide, C., Boolakee, T., Eckstein, T., Hommelhoff, P.
2021; 10 (14): 3701-3707
- **Light field-driven electron dynamics in 2D-materials**
Boolakee, T., Heide, C., Weber, H. B., Hommelhoff, P., IEEE
IEEE.2021
- **The effect of photo-carrier doping on the generation of high harmonics from MoS₂**
Heide, C., Kobayashi, Y., Liu, F., Ghimire, S., Heinz, T. F., Reis, D. A., IEEE
IEEE.2021