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### Publications

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#### PUBLICATIONS

- **Attosecond X-Ray Core-Level Chronoscopy of Aromatic Molecules** *PHYSICAL REVIEW X*  
Ji, J., Guo, Z., Driver, T., Trevisan, C. S., Cesar, D., Cheng, X., Duris, J., Franz, P. L., Glownia, J., Gong, X., Hammerland, D., Han, M., Heck, et al  
2025; 15 (4)
- **Attosecond X-ray sources, methods, and applications at present and future free-electron lasers: tutorial** *ADVANCES IN OPTICS AND PHOTONICS*  
Berrah, N., Cryan, J., Robles, R., Driver, T., Marinelli, A., Bucksbaum, P.  
2025; 17 (3): 623-725
- **Spectrotemporal Shaping of Attosecond X-Ray Pulses with a Fresh-Slice Free-Electron Laser.** *Physical review letters*  
Robles, R. R., Larsen, K. A., Cesar, D., Driver, T., Duris, J., Franz, P., Garratt, D., Guo, V., Just, G., Lemons, R., Lin, M. F., Obaid, R., Sudar, et al  
2025; 134 (11): 115001
- **Nanofocused attosecond hard x-ray free-electron laser with intensity exceeding 1019 W/cm2** *OPTICA*  
Inoue, I., Sato, T., Robles, R., Seaberg, M. H., Sun, Y., Zhu, D., Cesar, D., Ding, Y., Esposito, V., Franz, P., Guo, V., Halavanau, A., Sudar, et al  
2025; 12 (3): 309-310
- **Experimental Generation of Extreme Electron Beams for Advanced Accelerator Applications.** *Physical review letters*  
Emma, C., Majernik, N., Swanson, K. K., Ariniello, R., Gessner, S., Hessami, R., Hogan, M. J., Knetsch, A., Larsen, K. A., Marinelli, A., O'Shea, B., Perez, S., Rajkovic, et al  
2025; 134 (8): 085001
- **Probing Electronic Coherence between Core-Level Vacancies at Different Atomic Sites** *PHYSICAL REVIEW X*  
Wang, J., Driver, T.  
2025; 15: 011008
- **"Beam à la carte": Laser heater shaping for attosecond pulses in a multiplexed x-ray free-electron laser** *APPLIED PHYSICS LETTERS*  
Li, S., Zhang, Z., Alverson, S., Cesar, D., Driver, T., Franz, P., Isele, E., Duris, J. P., Larsen, K., Lin, M., Obaid, R., O'Neal, J. T., Robles, et al  
2024; 125 (19)
- **Three-dimensional theory of superradiant free-electron lasers** *PHYSICAL REVIEW RESEARCH*  
Robles, R. R., Giannessi, L., Marinelli, A.  
2024; 6 (3)
- **Wavelength scaling and multicolor operation of a plasma-driven attosecond x-ray source via harmonic generation** *PHYSICAL REVIEW ACCELERATORS AND BEAMS*  
Hessami, R., Morgan, J., Robles, R., Larsen, K. A., Marinelli, A., Emma, C.  
2024; 27 (7)
- **Characterization of a HPHT boron ion-implanted diamond X-ray mirror following high vacuum annealing** *DIAMOND AND RELATED MATERIALS*  
Margraf-O'Neal, R. A., Ynsa, M. D., Krzywinski, J., Ng, M. L., Macarthur, J. P., Ke, F., Zhong, Y., Mo, S., Pradhan, P., Robles, R., Robert, A., Sato, T., Zhu, et al  
2024; 146

- **Terawatt-scale attosecond X-ray pulses from a cascaded superradiant free-electron laser** *NATURE PHOTONICS*  
Franz, P., Li, S., Driver, T., Robles, R. R., Cesar, D., Isele, E., Guo, Z., Wang, J., Duris, J. P., Larsen, K., Glowia, J. M., Cheng, X., Hoffmann, et al  
2024
- **Experimental demonstration of attosecond pump-probe spectroscopy with an X-ray free-electron laser** *NATURE PHOTONICS*  
Guo, Z., Driver, T., Beauvarlet, S., Cesar, D., Duris, J., Franz, P. L., Alexander, O., Bohler, D., Bostedt, C., Averbukh, V., Cheng, X., Dimauro, L. F., Doumy, et al  
2024
- **Fast modeling of regenerative amplifier free-electron lasers** *PHYSICAL REVIEW RESEARCH*  
Robles, R. R., Halavanau, A., Marcus, G., Huang, Z.  
2023; 5 (4)
- **Low-loss stable storage of 1.2 & ANGS; X-ray pulses in a 14 m Bragg cavity** *NATURE PHOTONICS*  
Margraf, R., Robles, R., Halavanau, A., Kryzysinski, J., Li, K., MacArthur, J., Osaka, T., Sakdinawat, A., Sato, T., Sun, Y., Tamasaku, K., Huang, Z., Marcus, et al  
2023
- **Reconstruction of x-ray free-electron laser pulse duration and energy chirp from spectral intensity fluctuations** *PHYSICAL REVIEW ACCELERATORS AND BEAMS*  
Robles, R. R., Halavanau, A., Cesar, D., Lutman, A., Stupakov, G.  
2023; 26 (3)
- **X-ray Free Electron Laser Accelerator Lattice Design Using Laser-Assisted Bunch Compression** *APPLIED SCIENCES-BASEL*  
Xu, H., Anisimov, P. M., Carsten, B. E., Duffy, L. D., Marksteiner, Q. R., Robles, R. R.  
2023; 13 (4)
- **Experimental setup for high-resolution characterization of crystal optics for coherent X-ray beam applications.** *Journal of applied crystallography*  
Halavanau, A., Margraf, R., Robles, R., MacArthur, J., Qu, Z., Marcus, G., Wu, J., Sato, T., Zhu, D., Takacs, C. J., Arthur, R., Kraynis, O., Johnson, et al  
2023; 56 (Pt 1): 155-159
- **Versatile, high brightness, cryogenic photoinjector electron source** *PHYSICAL REVIEW ACCELERATORS AND BEAMS*  
Robles, R. R., Camacho, O., Fukasawa, A., Majernik, N., Rosenzweig, J. B.  
2021; 24 (6)