

Stanford

Tor Raubenheimer

Professor of Particle Physics and Astrophysics

Bio

ACADEMIC APPOINTMENTS

- Professor, Particle Physics and Astrophysics

Teaching

COURSES

2021-22

- Accelerators and Beams: Tools of Discovery and Innovation: PHYSICS 155 (Spr)

STANFORD ADVISEES

Doctoral Dissertation Reader (AC)

Sean Littleton

Publications

PUBLICATIONS

- **Two-stage reflective self-seeding scheme for high-repetition-rate X-ray free-electron lasers.** *Journal of synchrotron radiation*
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2021; 28 (Pt 1): 44–51
- **Coherence time characterization method for hard X-ray free-electron lasers** *OPTICS EXPRESS*
Zhou, G., Jiao, Y., Raubenheimer, T. O., Wang, J., Holman, A. J., Tsai, C., Wu, J. Y., Wu, W., Yang, C., Yoon, M., Wu, J.
2020; 28 (8): 10928–38
- **Attosecond Coherence Time Characterization in Hard X-Ray Free-Electron Laser.** *Scientific reports*
Zhou, G., Decker, F., Ding, Y., Jiao, Y., Lutman, A. A., Maxwell, T. J., Raubenheimer, T. O., Wang, J., Holman, A. J., Tsai, C., Wu, J. Y., Wu, W., Yang, et al
2020; 10 (1): 5961
- **Fluid dynamics analysis of a gas attenuator for X-ray FELs under high-repetition-rate operation** *JOURNAL OF SYNCHROTRON RADIATION*
Yang, B., Wu, J., Raubenheimer, T. O., Feng, Y.
2017; 24: 547-559
- **Multi-dimensional optimization of a terawatt seeded tapered Free Electron Laser with a Multi-Objective Genetic Algorithm** *NUCLEAR INSTRUMENTS & METHODS IN PHYSICS RESEARCH SECTION A-ACCELERATORS SPECTROMETERS DETECTORS AND ASSOCIATED EQUIPMENT*
Wu, J., Hu, N., Setiawan, H., Huang, X., Raubenheimer, T. O., Jiao, Y., Yu, G., Mandlekar, A., Spampinati, S., Fang, K., Chu, C., Qiang, J.
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- **Method to generate a pulse train of few-cycle coherent radiation** *PHYSICAL REVIEW ACCELERATORS AND BEAMS*
Garcia, B., Hemsing, E., Raubenheimer, T., Campbell, L. T., McNeil, B. W.
2016; 19 (9)
- **Staging optics considerations for a plasma wakefield acceleration linear collider** *NUCLEAR INSTRUMENTS & METHODS IN PHYSICS RESEARCH SECTION A-ACCELERATORS SPECTROMETERS DETECTORS AND ASSOCIATED EQUIPMENT*

Lindstrom, C. A., Adli, E., Allen, J. M., Delahaye, J. P., Hogan, M. J., Joshi, C., Muggli, P., Raubenheimer, T. O., Yakimenko, V.
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- **Echo-enabled harmonics up to the 75th order from precisely tailored electron beams** *NATURE PHOTONICS*
Hemsing, E., Dunning, M., Garcia, B., Hast, C., Raubenheimer, T., Stupakov, G., Xiang, D.
2016; 10 (8): 512-?
- **Two-photon photoemission from a copper cathode in an X-band photoinjector** *PHYSICAL REVIEW ACCELERATORS AND BEAMS*
Li, H., Limborg-Deprey, C., Adolphsen, C., McCormick, D., Dunning, M., Jobe, K., Raubenheimer, T., Vrielink, A., Vecchione, T., Wang, F., Weathersby, S.
2016; 19 (2)
- **Filamentation effect in a gas attenuator for high-repetition-rate X-ray FELs** *JOURNAL OF SYNCHROTRON RADIATION*
Feng, Y., Krzywinski, J., Schafer, D. W., Ortiz, E., Rowen, M., Raubenheimer, T. O.
2016; 23: 21-28
- **Measurements and analysis of a high-brightness electron beam collimated in a magnetic bunch compressor** *PHYSICAL REVIEW SPECIAL TOPICS-ACCELERATORS AND BEAMS*
Zhou, F., Bane, K., Ding, Y., Huang, Z., Loos, H., Raubenheimer, T.
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- **X-band rf driven free electron laser driver with optics linearization** *PHYSICAL REVIEW SPECIAL TOPICS-ACCELERATORS AND BEAMS*
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- **Femtosecond Visualization of Laser-Induced Optical Relativistic Electron Microbunches** *PHYSICAL REVIEW LETTERS*
Xiang, D., Hemsing, E., Dunning, M., Hast, C., Raubenheimer, T.
2014; 113 (18)
- **First Characterization of Coherent Optical Vortices from Harmonic Undulator Radiation** *PHYSICAL REVIEW LETTERS*
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- **First Characterization of Coherent Optical Vortices from Harmonic Undulator Radiation** *PHYSICAL REVIEW LETTERS*
Hemsing, E., Dunning, M., Hast, C., Raubenheimer, T., Xiang, D.
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- **Highly coherent vacuum ultraviolet radiation at the 15th harmonic with echo-enabled harmonic generation technique** *PHYSICAL REVIEW SPECIAL TOPICS-ACCELERATORS AND BEAMS*
Hemsing, E., Dunning, M., Hast, C., Raubenheimer, T. O., Weathersby, S., Xiang, D.
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- **Direct observation of fine-scale energy banding in echo-enabled harmonic generation** *PHYSICAL REVIEW SPECIAL TOPICS-ACCELERATORS AND BEAMS*
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- **Demonstration of harmonic interaction in an undulator up to the 15th order** *PHYSICAL REVIEW SPECIAL TOPICS-ACCELERATORS AND BEAMS*
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- **Modeling and design of an X-band rf photoinjector** *PHYSICAL REVIEW SPECIAL TOPICS-ACCELERATORS AND BEAMS*
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- **Generating periodic terahertz structures in a relativistic electron beam through frequency down-conversion of optical lasers** *PHYSICAL REVIEW LETTERS*
Dunning, M., Hast, C., Hemsing, E., Jobe, K., McCormick, D., Nelson, J., Raubenheimer, T. O., Soong, K., Szalata, Z., Walz, D., Weathersby, S., Xiang, D.
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- **Mode-locked multichromatic x rays in a seeded free-electron laser for single-shot x-ray spectroscopy** *PHYSICAL REVIEW SPECIAL TOPICS-ACCELERATORS AND BEAMS*
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- **All-optical time-resolved measurement of laser energy modulation in a relativistic electron beam** *PHYSICAL REVIEW SPECIAL TOPICS-ACCELERATORS AND BEAMS*
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- **Plasma wakefield acceleration experiments at FACET** *NEW JOURNAL OF PHYSICS*
Hogan, M. J., Raubenheimer, T. O., Seryi, A., Muggli, P., Katsouleas, T., Huang, C., Lu, W., An, W., Marsh, K. A., Mori, W. B., Clayton, C. E., Joshi, C.
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- **Present status and first results of the final focus beam line at the KEK Accelerator Test Facility** *PHYSICAL REVIEW SPECIAL TOPICS-ACCELERATORS AND BEAMS*
Bambade, P., Pons, M. A., Amann, J., Angal-Kalinin, D., Apsimon, R., Araki, S., Aryshev, A., Bai, S., Bellomo, P., Bett, D., Blair, G., Bolzon, B., Boogert, et al
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- **Sharp reduction of the secondary electron emission yield from grooved surfaces** *JOURNAL OF APPLIED PHYSICS*
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- **Secondary electron yield and groove chamber tests in PEP-II** *2007 IEEE PARTICLE ACCELERATOR CONFERENCE, VOLS 1-11*
Pivi, M., Collet, G., King, F., Kirby, R., Markiewicz, T., Raubenheimer, T., Seeman, J., Wang, L., Le Pimpec, F.
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