Boaz Nash
Curriculum Vitae

Personal Details

Date of Birth: January 19, 1976
Place of Birth: Santa Cruz, CA, USA
Nationality: US
email: bnash@radiasoft.net

Current Position

Sep 2017 – present Research Scientist, RadiaSoft LLC

Projects and duties:

- Development of SRW x-ray optics software and interface to Sirepo web-based GUI. Developed brightness module for undulator radiation including the effects of energy spread and detuning.
- Coordination of Radia software development project in collaboration with Brookhaven National Laboratory
- Spin tracking for electron ion collider, using the Zgoubi particle tracking code, and interface to Sirepo web-based GUI.

Education and Posts

Sep 2012 – present	Scientist, Accelerator Source Division, ESRF
Sep 2009 – Sep 2012	Postdoctoral Associate European Synchrotron Radiation Facility, beam dynamics group
Sep 2006 – Aug 2009	Postdoctoral Associate Brookhaven National Laboratory, NSLS-II, lattice design and beam dynamics
Sep 1999 – Aug 2006	PhD in Physics Title: Analytical Approach to Eigen-Emittance Evolution in Storage Rings Stanford University, CA, USA Advisor: Alex Chao
Sep 1994 – Aug 1998	Bachelors Degree in Mathematics/Physics Reed College, Portland, OR, USA

Research Experience and Interests

Electron beam dynamics and x-ray properties

Electron beam dynamics: radiation damping and quantum diffusion, intrabeam scattering, Touschek lifetime, collective effects, non-linear dynamics, spin polarization and depolarization. In the context of synchrotron light sources I am interested in helping to bridge the gap between the different methods of x-ray science and the electron beam dynamics.

Selected Conference Proceedings and Publications

B. Nash, O. Chubar, D. L. Bruhwiler, M. Rakitin, P. Moeller, R. Nagler, and N. Goldring "Undulator radiation brightness calculations in the Sirepo GUI for SRW", Proc. SPIE 11110, Advances in Laboratory-based X-Ray Sources, Optics, and Applications VII, 111100K (9 September 2019); https://doi.org/10.1117/12.2530663

M.S. Rakitin, P. Moeller, R. Nagler, B. Nash, D.L. Bruhwiler, D. Smalyuk, M. Zhernenkov and O. Chubar, "Sirepo: an open-source cloud-based software interface for X-ray source and optics simulations," Journal of Synchrotron Radiation 25, 1877 (2018). https://journals.iucr.org/s/issues/2018/06/00/il5006/

B. Nash, J. P. Edelen, N. B. Goldring, and S. D. Webb, "Beamline Map Computation for Paraxial Optics", in *Proc. 13th International Computational Accelerator Physics Conference (ICAP'18)*, Key West, Florida, USA, Oct. 2018, pp. 297-302. http://inspirehep.net/record/1736153

B. Nash, O. Chubar, N. Goldring, D. L. Bruhwiler, P. Moeller, R. Nagler, *and* M. Rakitin "Detailed x-ray brightness calculations in the sirepo GUI for SRW", SRI 2018, AIP Conference Proceedings **2054**, 060080 (2019) https://aip.scitation.org/doi/10.1063/1.5084711

J.C. Biasci, J.F. Bouteille, N. Carmignani, J. Chavanne, D. Coulon, Y. Dabin, F. Ewald, L. Farvacque, L. Goirand, M. Hahn, J. Jacob, G. LeBec, S. Liuzzo, B. Nash, H. Pedroso-Marques, T. Perron, E. Plouviez, P. Raimondi, J.L. Revol, K. Scheidt & V. Serrière "A Low-Emittance Lattice for the ESRF", J.C. Biasci et. al., Synchrotron Radiation News, November, 2014 https://www.tandfonline.com/doi/abs/10.1080/08940886.2014.970931

B. Nash, F. Ewald, L. Farvacque, J. Jacob, E. Plouviez, J.L. Revol, K. Scheidt "Touschek Lifetime and Momentum Acceptance Measurements for ESRF", , Proc. IPAC 2011 https://inspirehep.net/record/1182893

L. Yu, B. Nash , “Linear Algebraic Method for Non-Linear Map Analysis”**,** Proc. PAC ’09 and BNL--82321-2009-CP
http://www.bnl.gov/isd/documents/44396.pdf

B. Nash, J. Wu and A. Chao, “Equilibrium beam distribution in an electron storage ring near linear synchrobetatron coupling resonances”, Phys. Rev. ST Accel. Beams 9, 032801 (2006).
https://journals.aps.org/prab/abstract/10.1103/PhysRevSTAB.9.032801

Software Experience and additional skills

Tracking code usage and development: Accelerator Toolbox, Tracy, Elegant, Mad-X/PTC, Zgoubi.
Synchrotron radiation and insertion devices: Familiarity with SRW, Shadow, and Radia.

Organization of the Zgoubi Workshop, August 26-30, 2019, Boulder, CO
https://zgoubi-workshop.com/

Coordination of Accelerator Toolbox Open Source collaborative project, atcollab 2010-2016

Computer Languages: C, Matlab, Mathematica
Operating Systems: Linux, Mac OS X, Windows
Languages: English, B2 level French, basic Spanish