

Curriculum Vitae

Wayman Crow Professor of Physics Henric Krawczynski

Department of Physics, CB 1105
Washington University
One Brookings Drive
St. Louis, MO 63130

Email:
krawcz*a*t*wustl.edu

Education

Yale University	Astrophysics	Post-Doctoral 2000-2001
Max-Planck-Institut für Kernphysik	Astrophysics	Post-Doctoral 1997-2000
University of Hamburg, Germany	Physics	Ph. D. in Physics, 1997
University of Hamburg, Germany	Physics	Diploma in Physics, 1994

Appointments

Washington University	Wayman Crow Professor	2020-~
Washington University	Professor	2011-2020
Washington University	Associate Professor	2007-2011
Washington University	Assistant Professor	2002-2007
Yale University	Lecturer	2001-2002

Research Interests

Theoretical modeling of the emission from black holes, blazars, and magnetars. Principal Investigator (PI) of the *XL-Calibur* hard X-ray polarimetry missions. Development of cryogenic X-ray and gamma-ray detectors. Science team member of *IXPE* soft X-ray polarization mission. X-ray observations and interpretation.

Management Experience

Krawczynski has been the principal investigator of twenty four grants (mostly NASA) and the co-investigator of five grants. He has been the principal investigator of *X(L)-Calibur* since 2011. He led the X-Calibur experiment on successful flights in 2016 (Fort Sumner) and 2018/19 (McMurdo). Krawczynski's NASA sponsored work included the analysis of X-ray data from the XMM-Newton, Chandra, RXTE, and Fermi satellites. Krawczynski is leading the Washington University group with a substantial technical support staff, including two electrical engineers, a mechanical technician and an electrical technician. At Washington University, Krawczynski was the primary advisor of 7 post-doctoral researchers and 15 graduate students.

Recent Journal Articles

Tang, J., Kislak, F., & Krawczynski, H. (2021), Cadmium Zinc Telluride detectors for a next-generation hard X-ray telescope, *Astroparticle Physics*, 128, 102563, <https://ui.adsabs.harvard.edu/abs/2021APh...12802563T>.

Abarr, Q., Awaki, H., Baring, M. G., et al. (2021), *XL-Calibur* - a second-generation balloon-borne hard X-ray polarimetry mission, *Astroparticle Physics*, 126, 102529, <https://ui.adsabs.harvard.edu/abs/2021APh...12602529A>.

Krawczynski, H. (2021), Generally Applicable Formalism for Modeling the Observable Signatures of Inflows, Outflows, and Moving Coronal Plasma Close to Kerr Black Holes, *The Astrophysical Journal*, 906, 34, <https://ui.adsabs.harvard.edu/abs/2021ApJ...906...34K>.

Abarr, Q., & Krawczynski, H. (2021), The Iron Line Profile from Warped Black Hole Accretion Disks, *The Astrophysical Journal*, 906, 28, <https://ui.adsabs.harvard.edu/abs/2021ApJ...906...28A>.

Abarr, Q., Baring, M., Beheshtipour, B., et al. (2020), Observations of a GX 301-2 Apsastron Flare with the X-Calibur Hard X-Ray Polarimeter Supported by NICER, the Swift XRT and BAT, and Fermi GBM, *The Astrophysical Journal*, 891, 70, <https://ui.adsabs.harvard.edu/abs/2020ApJ...891...70A>.

Abarr, Q., & Krawczynski, H. (2020), The Polarization of X-Rays from Warped Black Hole Accretion Disks, *The Astrophysical Journal*, 889, 111, <https://ui.adsabs.harvard.edu/abs/2020ApJ...889..111A>.

Krawczynski, H., Chartas, G., & Kislak, F. (2019), The Effect of Microlensing on the Observed X-Ray Energy Spectra of Gravitationally Lensed Quasars, *The Astrophysical Journal*, 870, 125, <https://ui.adsabs.harvard.edu/abs/2019ApJ...870..125K>.

Krawczynski, H. (2018), Difficulties of quantitative tests of the Kerr-hypothesis with X-ray observations of mass accreting black holes, *General Relativity and Gravitation*, 50, 100, <https://ui.adsabs.harvard.edu/abs/2018GReGr..50..100K>.

Marin, F., Dovčiak, M., Muleri, F., Kislak, F. F., & Krawczynski, H. S. (2018), Predicting the X-ray polarization of type 2 Seyfert galaxies, *Monthly Notices of the Royal Astronomical Society*, 473, 1286, <https://ui.adsabs.harvard.edu/abs/2018MNRAS.473.1286M>.

Kislak, F., Abarr, Q., Beheshtipour, B., et al. (2018), Optimization of the design of X-Calibur for a long-duration balloon flight and results from a one-day test flight, *Journal of Astronomical Telescopes, Instruments, and Systems*, 4, 011004, <https://ui.adsabs.harvard.edu/abs/2018JATIS...4a1004K>.

Beheshtipour, B., Krawczynski, H., & Malzac, J. (2017), The X-Ray Polarization of the Accretion Disk Coronae of Active Galactic Nuclei, *The Astrophysical Journal*, 850, 14, <https://ui.adsabs.harvard.edu/abs/2017ApJ...850...14B>.

Krawczynski, H., & Beheshtipour, B. (2017), On the Calculation of the Fe K-alpha Line Emissivity of Black Hole Accretion Disks, *The Astrophysical Journal*, 849, 66, <https://ui.adsabs.harvard.edu/abs/2017ApJ...849...66K>.

Krawczynski, H., & Chartas, G. (2017), Simulations of the Fe K α Energy Spectra from Gravitationally Microlensed Quasars, *The Astrophysical Journal*, 843, 118, <https://ui.adsabs.harvard.edu/abs/2017ApJ...843..118K>.