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### Franz X. Kaertner



Adjunct Professor of Electrical Engineering, *Electrical Engineering and Computer Science (EECS)*

77 Massachusetts Avenue  
Room 36-351  
Cambridge, MA 02139

kaertner@mit.edu  
617.452.3616—Tel

#### Administrative Assistant

Dorothy Fleischer  
dff@mit.edu  
617.253.1570—Tel  
Room 36-345

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Professor Franz X. Kärtner is a principal investigator in the Research Laboratory of Electronics (RLE) at the Massachusetts Institute of Technology (MIT) and head of the Ultrafast Optics and X-rays Division in the Center for Free-Electron Laser Science at DESY Hamburg. He received his Diploma and Ph.D. degree in Electrical Engineering from Technische Universität München, Germany in 1986, and 1989, respectively. He spent several years as postdoctoral researcher and hold faculty appointments at MIT, Swiss Federal Institute of Technology, and Universität Karlsruhe (TH) before joining MIT and lately Universität Hamburg, where he is an Adjunct Professor of Electrical Engineering and Professor of Physics, respectively. He served as Program and General Co-Chair for LEOS Annual Meetings 2002 and 2004, Conference on Lasers and Electro-Optics 2007 and 2009, and he chaired the Ultrafast Optical Phenomena Technical Group of OSA 2008–2010 and Commission D, Electronics and Photonics, of the International Union of Radio Scientists (URSI) from 2008–2011. He has published more than 230 peer reviewed journal articles and has been awarded over 20 patents and is a fellow of the Optical Society of America and the Institute of Electrical and Electronics Engineers.

Kärtner's research interests include few-cycle and ultralow timing jitter femtosecond lasers and its use in frequency metrology, attosecond photonics: precision timing distribution in advanced accelerators and light sources, photonic analog-to-digital conversion and attosecond science: novel soft and hard x-ray sources.

#### Keywords

quantum electronics, ultrashort pulse lasers, laser optics, octave spanning lasers, femtosecond lasers, frequency metrology, optical clocks, femtosecond timing distribution and electronic-photonic integrated circuits

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