Edgar Weckert

Future Challenges in Particle-Accelerator-Driven Photon Sources

X-ray analytical techniques at storage-ring-based radiation sources have achieved an amazing level of maturity and sophistication during the last 2-3 decades. These methods contribute in manifold ways to the solution of analytical problems in many scientific fields, and thus contribute to solving grand challenges in society. Further development in a number of scientific disciplines, however, such as in materials research or nanoscience, demands significantly improved beam parameters in terms of an even higher spatial or temporal resolution compared to those presently available at storage-ring-based sources. This led or is still leading to the development of the next generation of ring-based sources and to the establishment of free-electron lasers at various places around the world. Starting from what has been achieved today, this talk will give an overview of how DESY and its partners are planning to address upcoming challenges in this field within their future strategic development.

Edgar Weckert received his Ph.D. in crystallography at the University Erlangen-Nürnberg in 1988. From 1997 to 2000 he was a Lecturer at the University Karlsruhe (TH), and since 2000 has been the leading senior scientist at DESY. From 2001 to 2005 he served as a lecturer at the University Hamburg, and has been a Professor at University Hamburg since 2005. In 2008 he was named Acting Director for Photon Science at DESY, and was named the Director for Photon Science at DESY in January 1, 2009. He is a member of the board of directors of the Helmholtz Institute Jena, and a member of the board of directors of the Center for Structural Systems Biology. His scientific interests include x-ray physics, multi-beam diffraction, phase problems in crystallography, precise determination of crystal structures, radiation damage in proteins, and application of free-electron laser radiation for the determination of non-periodic structures. He serves or has served on a number of international advisory committees.

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