PAUL SCHERRER INSTITUT

PSI

Rasmus Ischebeck

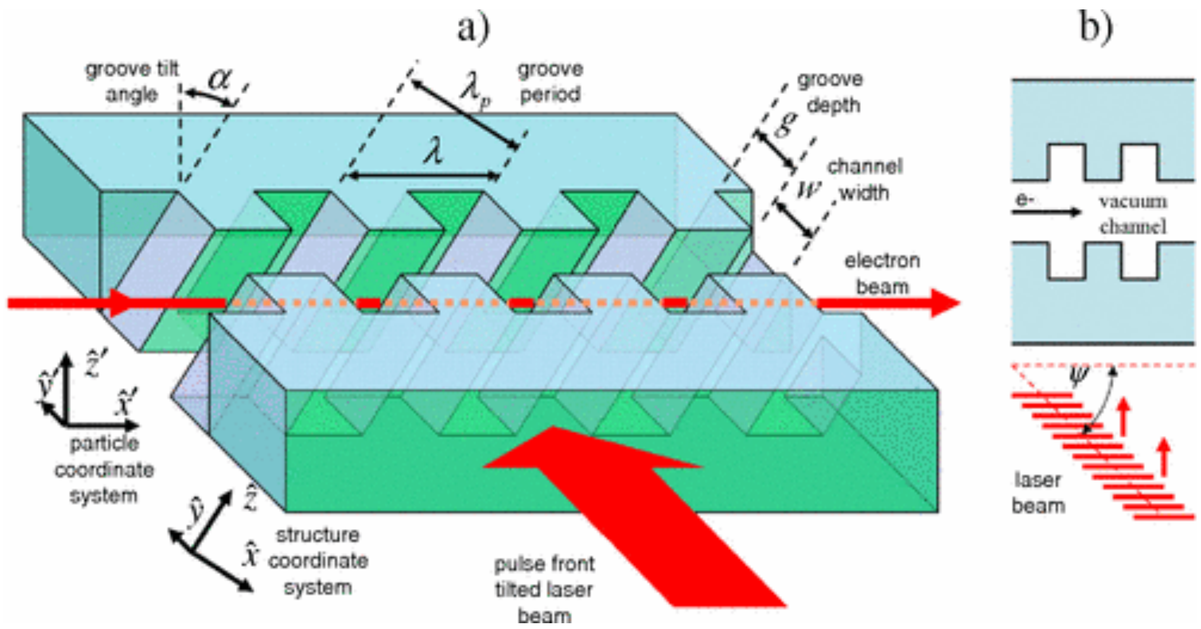
Synchrotron Radiation

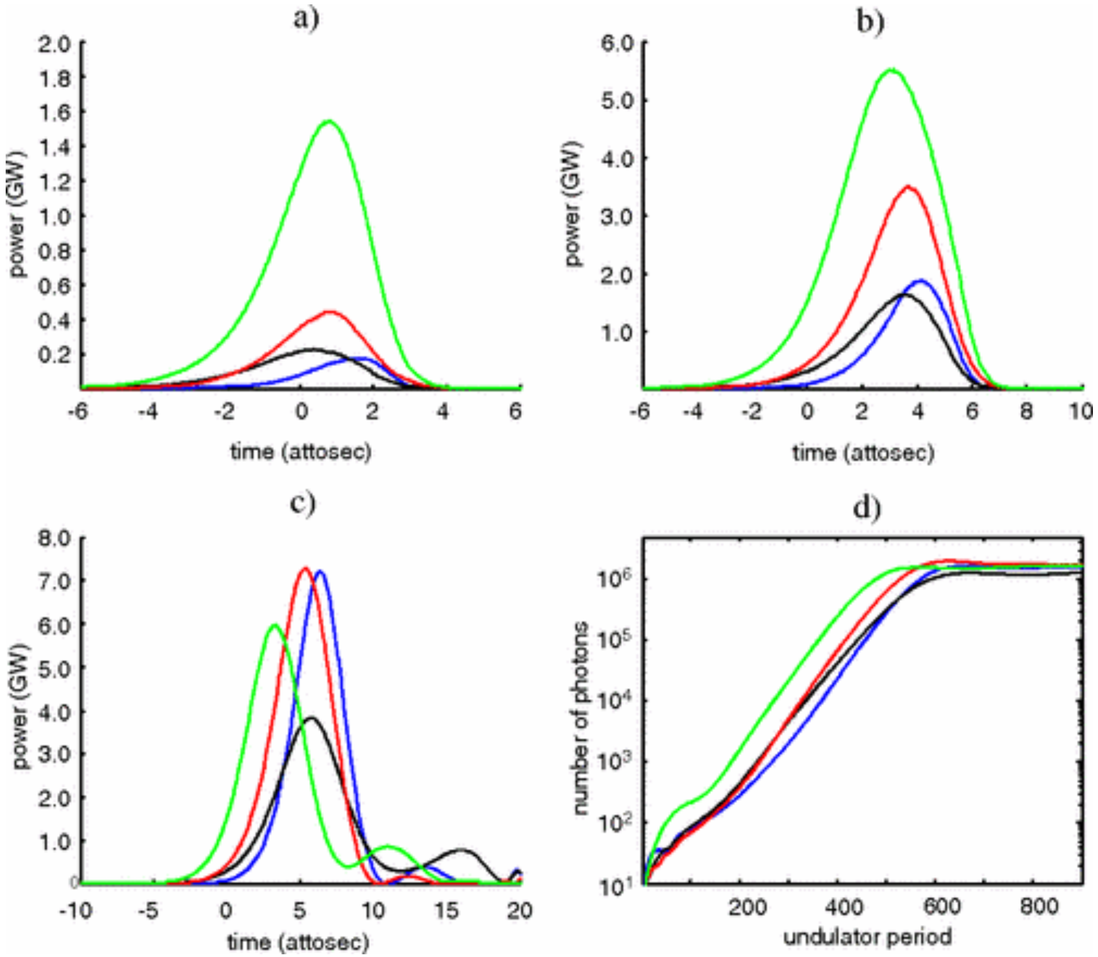
Joint Universities Accelerator School

How Did You Like the Course?

Nick Veasey

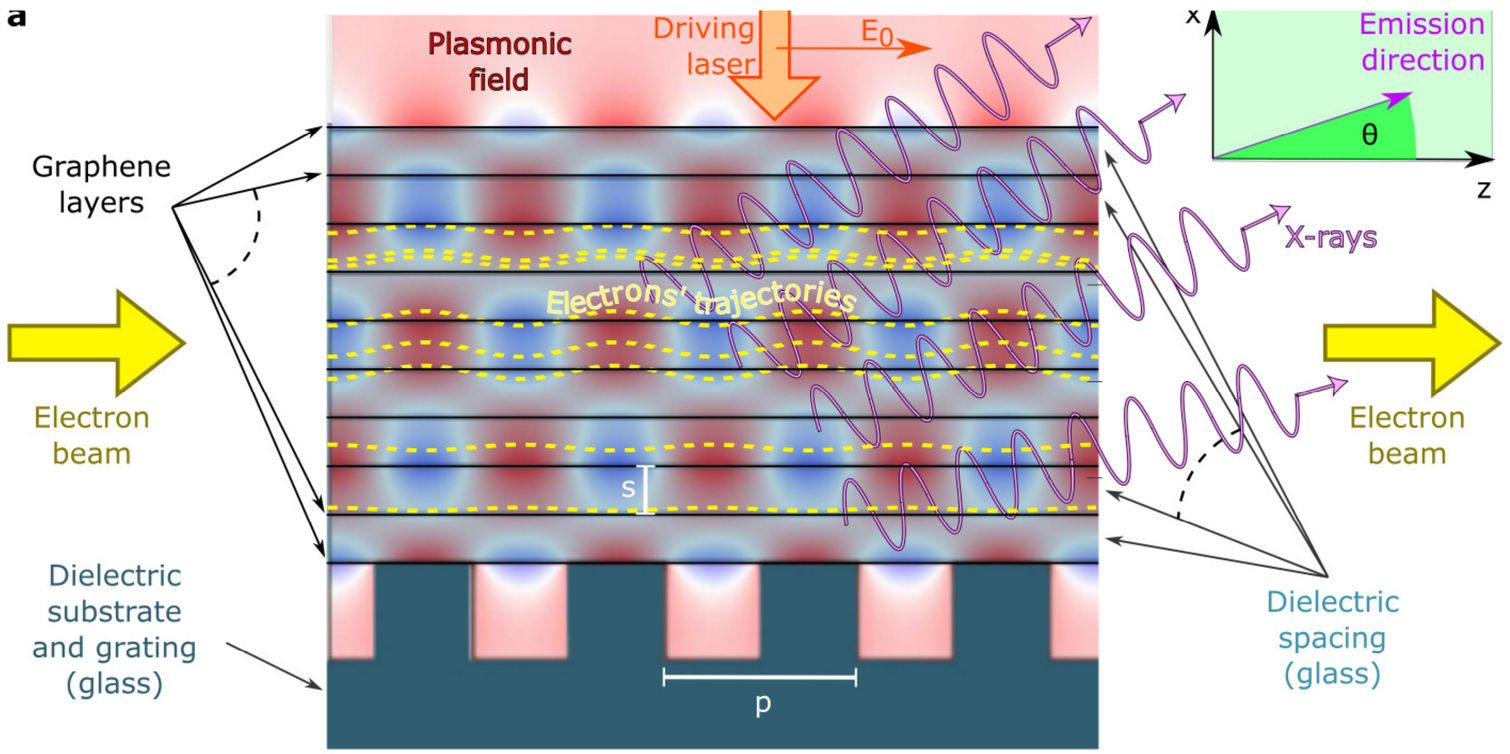
Accelerator Research for X-Ray Science

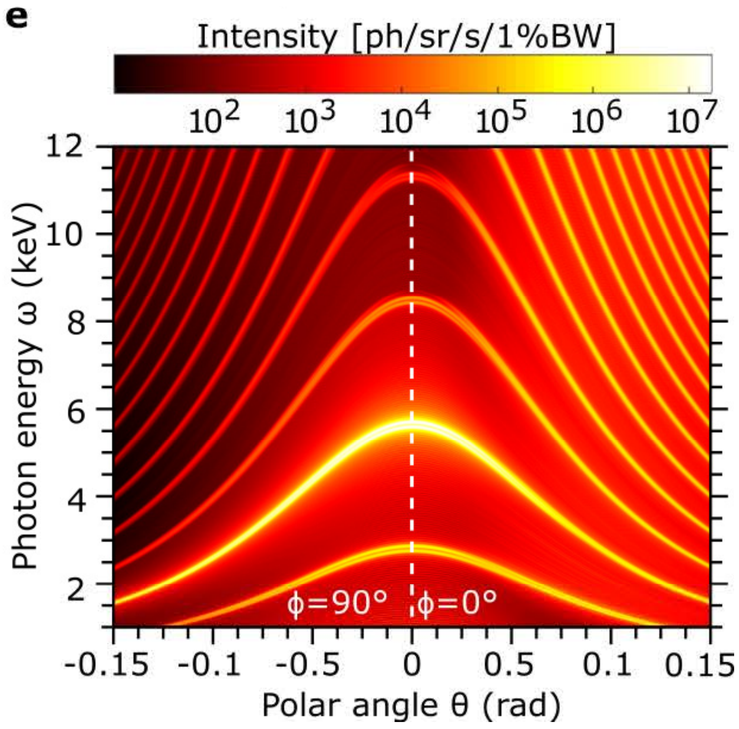




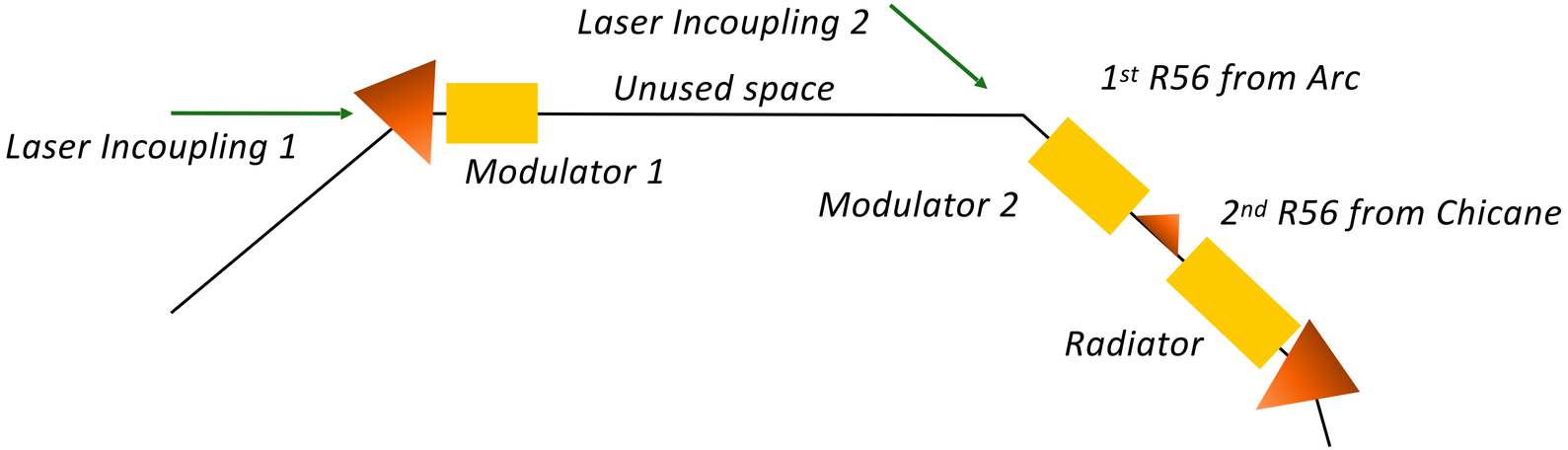
T. Plettner and R. L. Byer, Phys. Rev. ST Accel. Beams 11, 030704

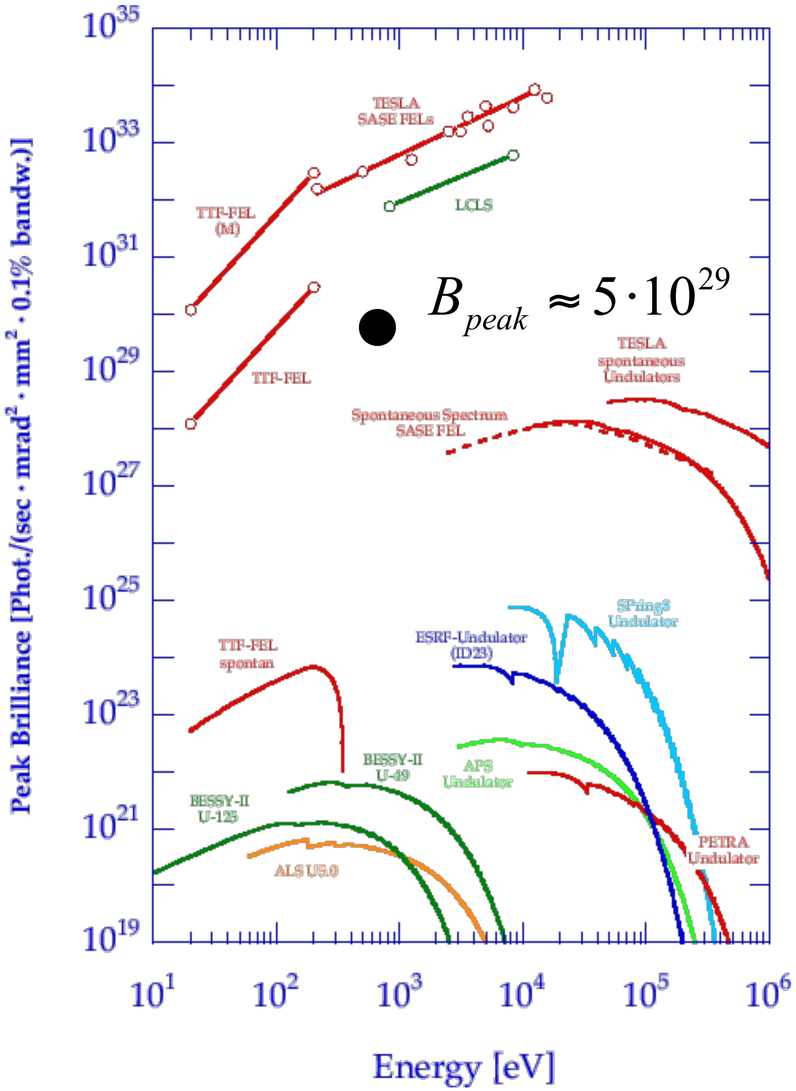
Accelerator Research for X-Ray Science



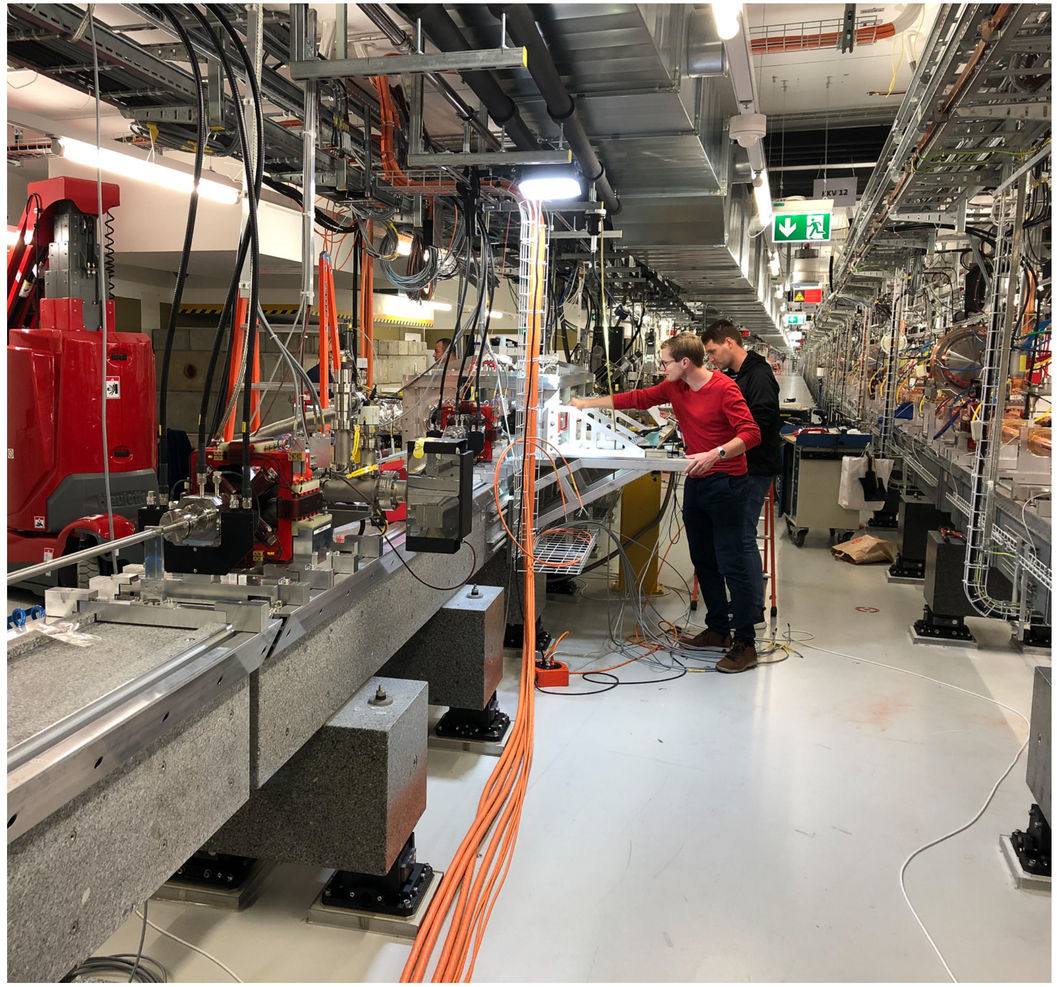


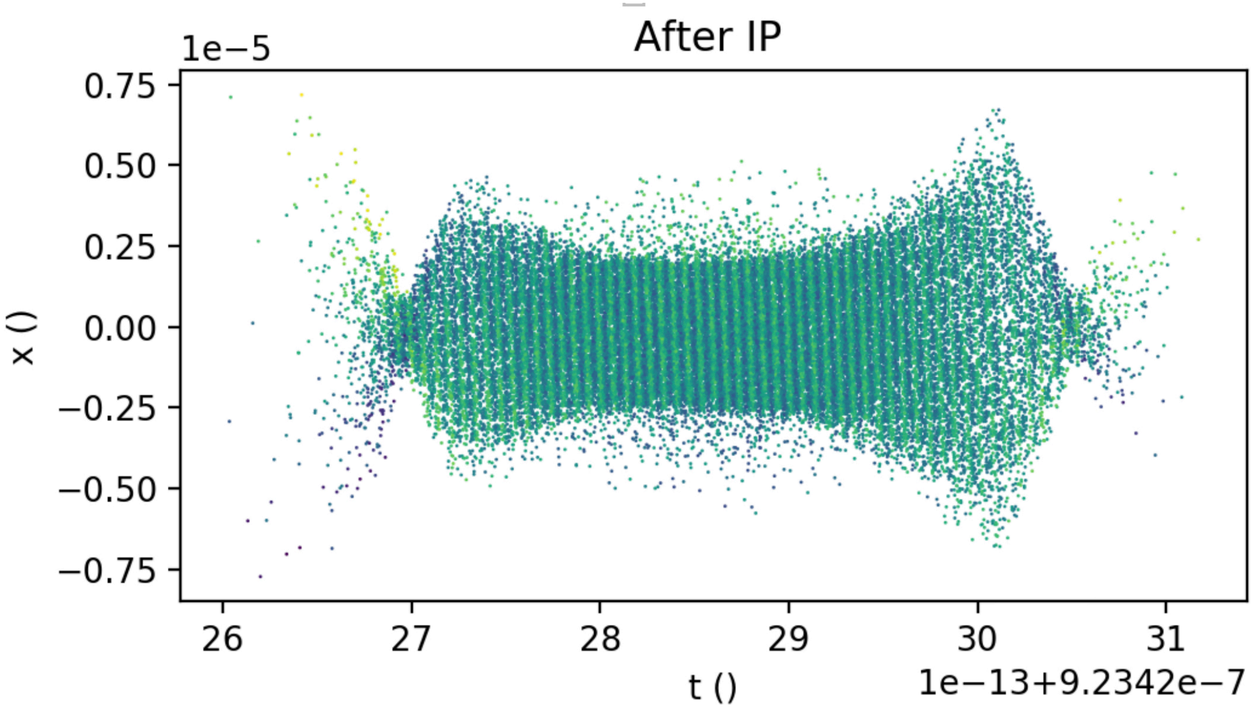
Accelerator Research for X-Ray Science





Accelerator Research for X-Ray Science

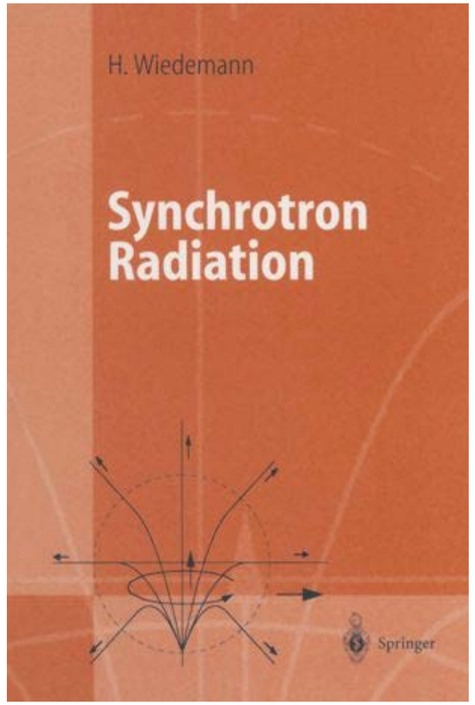




Resources for You

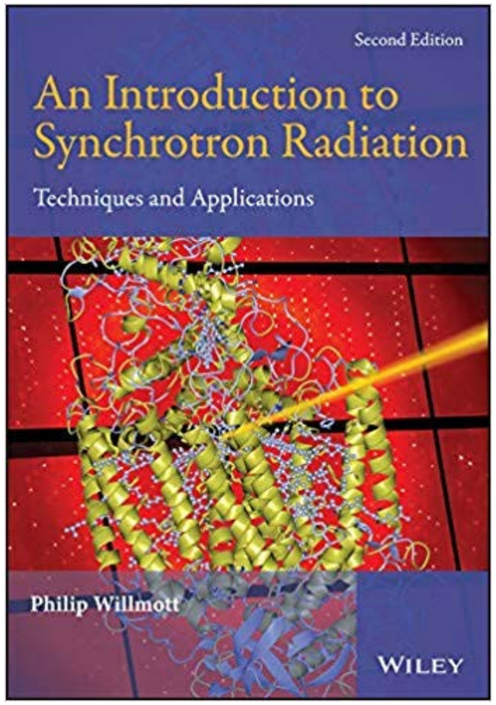
Books on synchrotrons

- Accelerator side:



Helmut Wiedemann
Synchrotron Radiation
[3-642-07777-3; 3-662-05312-8]

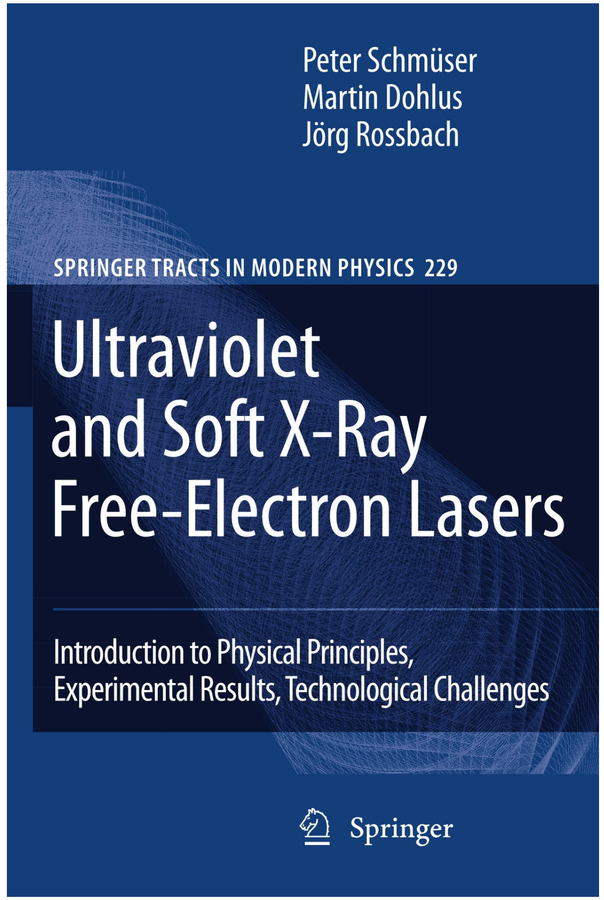
- User side:



Philip Willmott
An Introduction to Synchrotron Radiation
[1119280397]

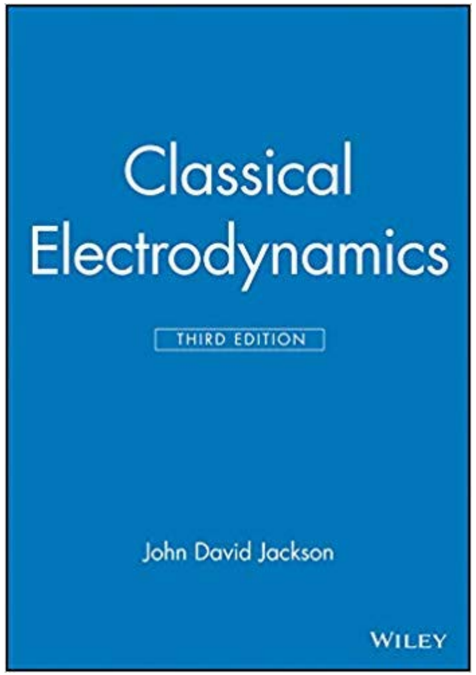
Resources for You

- A book on FELs



Schmüser, Dohlus & Rossbach
Ultraviolet and Soft X-Ray Free-Electron Lasers
[978-3-540-79571-1]

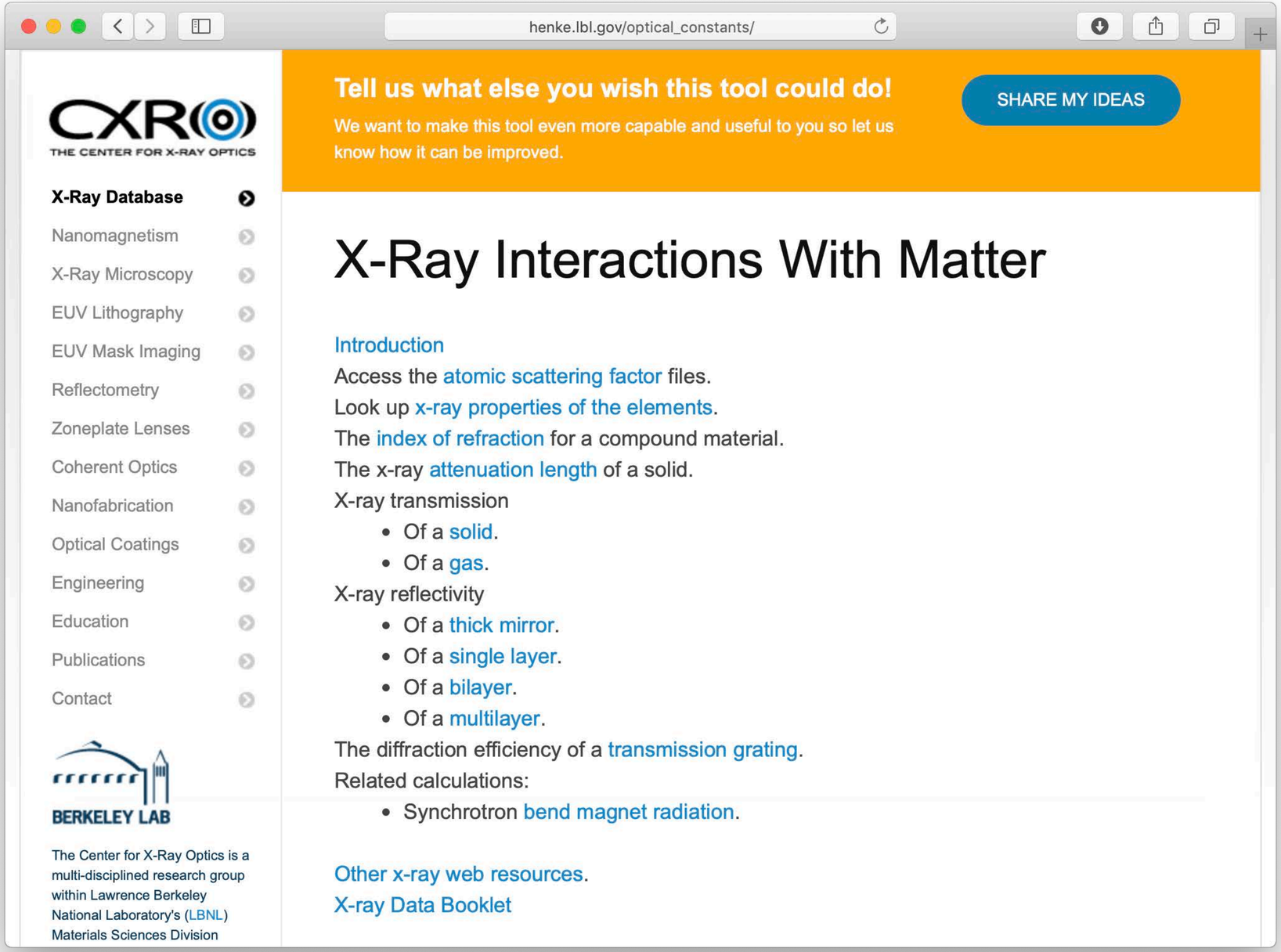
- Derivation of synchrotron radiation from Maxwell's Equations



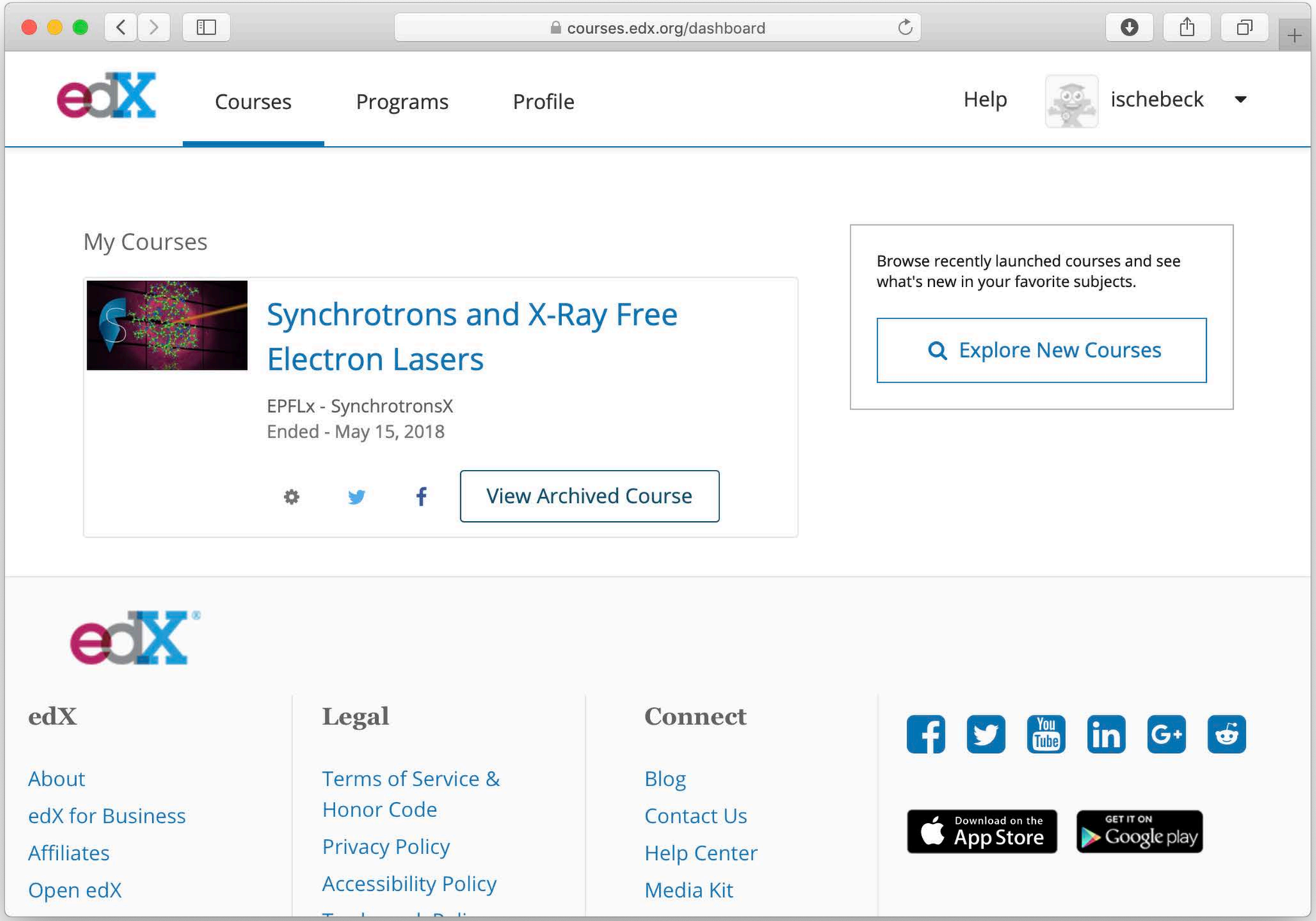
John David Jackson
Classical Electrodynamics
[978-0471309321]

"Undergraduate E&M is about solving the simple problems exactly. Jackson E&M is about learning to approximate reliably. The entire book, with few exceptions, is a mathematical discussion on finding way to solve only 4 equations for different boundary conditions." (Davon Ferrara)

On-Line Resources

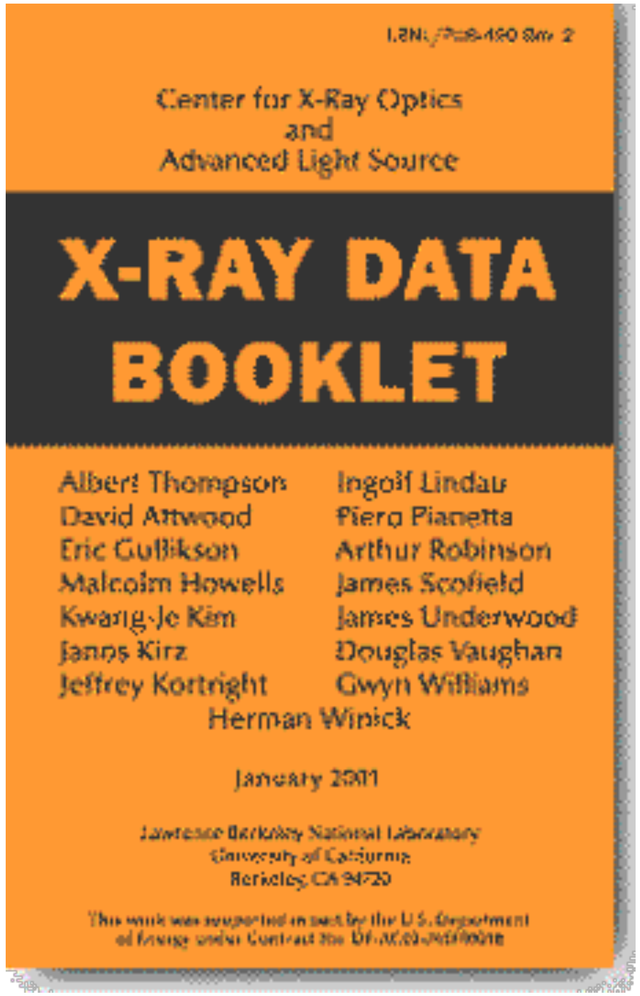


On-Line Resources



The X-Ray Data Booklet

- On-line: http://xdb.lbl.gov/xdb-new.pdf



Resources for the Exam

- The exam will be an open-book exam.
- You are permitted to use all the course materials, as well as your notes.
- Please bring a calculator, install a calculator app on your computer/tablet, or use Python/Matlab/Mathematica.
  (Make sure your application runs without an online connection.)
- Please download all lecture material to your computer/tablet.
- In addition, please download from the Indico site:
  - The X-Ray Data Booklet
  - The sheet with natural constants
- The exam will differ somewhat from last year's exam:
  there will be questions on the uses of synchrotron radiation.
  The problems will be similar to the ones in this year's exercises.

- **Mobile phones are not permitted. Only your laptop/tablet is allowed.**
- **On-line connections during the exams are not permitted.**
- **Turn your Wi-Fi off, switch your tablet to airplane mode, and deposit your mobile phone with the instructors.**

Any More Questions…

- e-mail: rasmus.ischebeck@psi.ch
- web page: https://ischebeck.net

- see (some of) you at PSI!