1 Slide 1 Minute

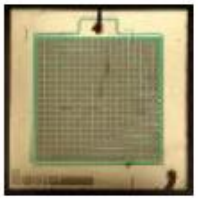
Name	First	Date received		Name	First	Date received
Ratschow	Sebastian	09.09.2015		Mazzoni	Stefano	28.09.2015
Xu	Chen	11.09.2015		Themann	Harry	28.09.2015
Smygacheva	Antonina	14.09.2015		Kalliokoski	Matti	28.09.2015
Mak	Alan	14.09.2015		Kiefer	Robert	28.09.2015
Tomin	Sergey	15.09.2015		Krupa	Michal	28.09.2015
Nasse	Michael	15.09.2015		Betz	Michael	28.09.2015
Cassany	Bruno	16.09.2015				
Jentzsch	Jennifer	18.09.2015		**Total**		**6**
El Hayek	Youssef	18.09.2015				
Fomin	Yevgeniy	18.09.2015		**Total students**		**30**
Brosi	Miriam	18.09.2015				
Blomley	Edmund	18.09.2015		Bailey	Roger	24.09.2015
Draskovic	Drasko	18.09.2015		Herr	Werner	24.09.2015
Wilcox	Christopher	18.09.2015		Caspers	Fritz	24.09.2015
Medland	John	18.09.2015		Schmickler	Hermann	25.09.2015
Li	JI	18.09.2015		Wittenburg	Kay	28.09.2015
Scifo	Jessica	21.09.2015		Gasior	Marek	28.09.2015
Gorgisyan	Ishkhan	21.09.2015				
Wu	Jason	22.09.2015				
Lo	Kevin	23.09.2015				
Albright	Simon	24.09.2015				
Olexa	Jakub	25.09.2015				
Koevener	Toke	26.09.2015				
Zorzetti	Sylvia	27.09.2015				
Total		**24**		**Total lecturers**		**6**

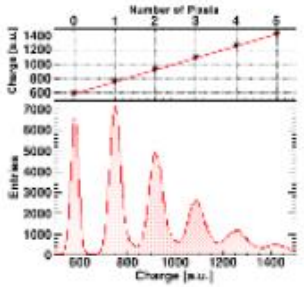
Sebastian Ratschow, FAIR@GSI, GSI

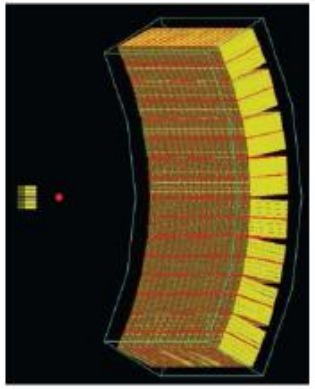
- at all times: lived in Germany
- before 1995: studied mathematics and physics at Mainz University
  - final thesis in complex analysis
  - degree received: certification as secondary teacher
- 1995-2000: PhD received at Institute for Nuclear Physics in Mainz, at the Mainz Microtron (MAMI)
  - performed all beam dynamics calculations necessary for the subsequent construction of the Harmonic Double Sided Microtron (HDSM, an 1.6GeV cw electron accelerator at MAMI)
- 2000-2003: postdoc at TEMF (Theory of ElectroMagnetic Fields), TU Darmstadt
  - worked on surface roughness wake fields
  - calculated analytically the wake function of a spherical resonator
- since 2003: accelerator physicist at GSI, Helmholtz Centre for Heavy Ion Research, Darmstadt
  - made all the ion optical layout for all beam lines of the FAIR-Project
  - performs other tasks, e.g. stand-by duty for the operation of the Heavy Ion Synchrotron SIS
- private issues:
  - is married, has three children (two studying at universities, the third still goes to school)
  - likes to play pieces of music, preferably by J.S. Bach, on classical guitar and on piano
  - sings in more than two choirs

Chen Xu

- Education
  - PhD in physics on the testing and simulation of silicon photomultipliers for medical applications (Hamburg University & DESY).







- Fellow at CERN since 2015
  - System tests and checks of the beam loss monitoring system for the LHC

Smygacheva Antonina

NRC “Kurchatov Institute”, Moscow, Russia

Present:

- PhD student at the NRC “Kurchatov Institute”
- Work on an electron beam stability at the SR source “Siberia-2”

Interests:

- RF technique and RF systems
- Beam dynamics

What’s done:

- The RF kicker for the longitudinal feedback system

Alan Mak

LUND UNIVERSITY

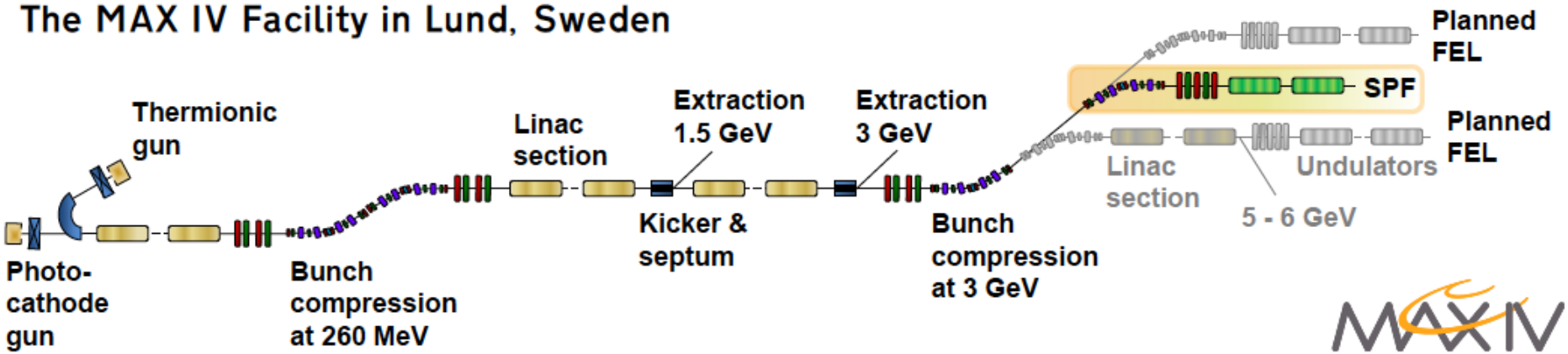
Current Research

- PhD student in accelerator physics at MAX IV Laboratory, Lund University, Sweden
- Modelling and simulation studies of future free-electron laser (FEL) facilities
- Studying the use of tapered undulators for FEL efficiency enhancement
- Exploring the possibility to operate the Short Pulse Facility (SPF) as a SASE FEL, for the development of FEL techniques

My Background

- M.Sc. at Leiden University, Netherlands
  Project in single-molecule biophysics
- B.Sc. at UC Santa Barbara, USA
  Project in elementary particle physics
- Summer student at DESY, Germany (2007) and at INFN, Italy (2008)
- Enjoy international and interdisciplinary settings; interest in travelling and learning foreign languages

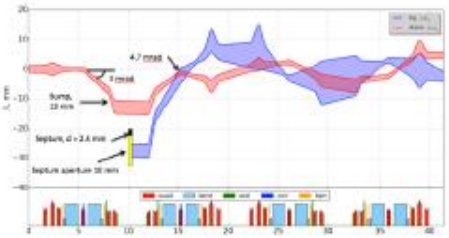
The MAX IV Facility in Lund, Sweden

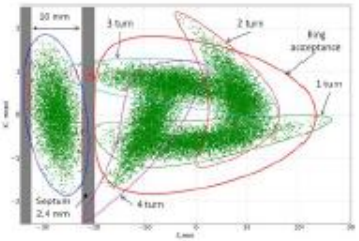


MAX IV LABORATORY

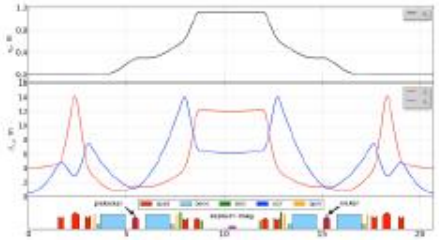
1 slide/1 minute: Sergey Tomin

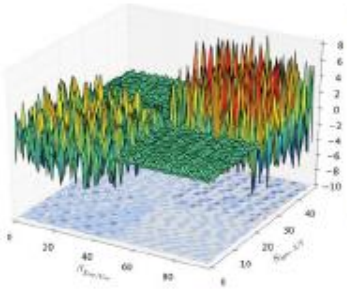
- Student at BINP (Novosibirsk):
  - injection/extraction systems

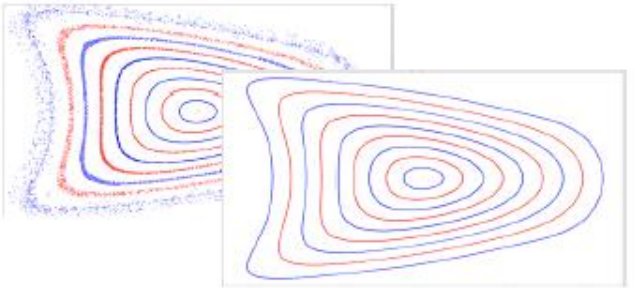




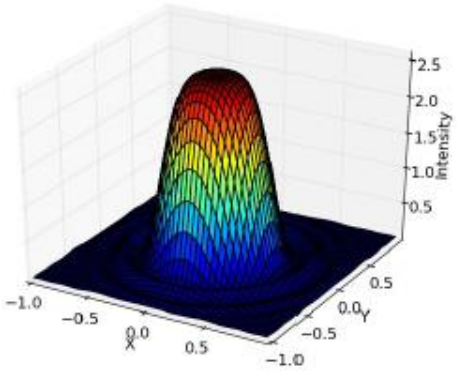
- PhD student at Kurchatov Light Source (Moscow):
  - Beam optics & dynamics
  - Close orbit correction
  - Insertion devices influence
  - Spontaneous radiation

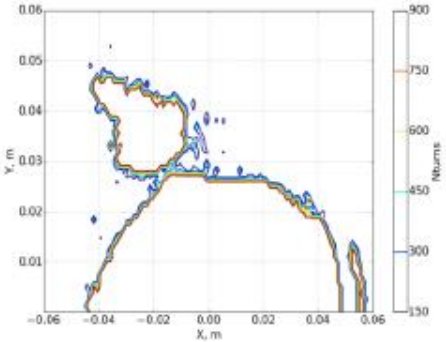






- Currently Postdoc at The European XFEL (Hamburg):
  - FEL calculations
  - S2E simulation including collective effects

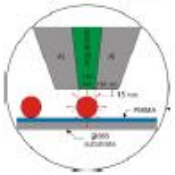


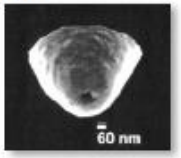


Background Michael J. Nasse

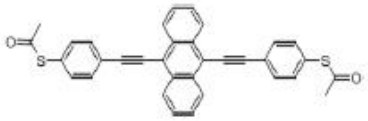
1999–2006 **High resolution / Nano-optics: Near-field Scanning Optical Microscopy (NSOM), Single molecule spectroscopy, Fluorescence, Biophotonics, 3D PSF (exp. + theory)**

NSOM

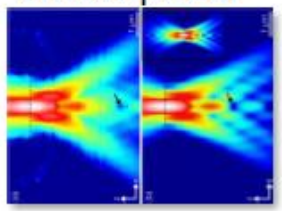




Single molecule fluorescence

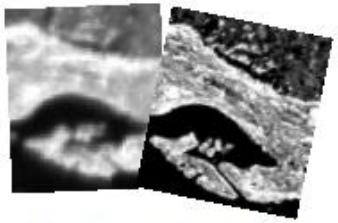


Microscope PSF

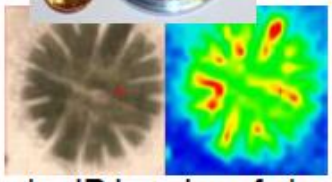


2006–2011 **Synchrotron infrared (IR) microspectroscopy and imaging (2D and 3D), Chemical imaging; Microfluidics (mid-IR flow-cell); *In vivo* bioimaging**

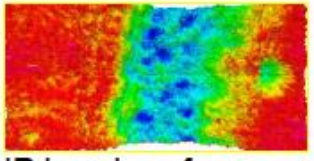
IRENI beamline



HD chem. imaging



In vivo IR imaging of algae



IR imaging of neurons

IR tomo-graphy

2011–present **FLUTE: versatile linac-based THz source**
Gun laser for photo-injector, Laser diagnostics & transport, THz beam transport

FLUTE

Gun laser

Bruno Cassany

90's Electrical Engineer
PhD in Plasma physics
Co-founder of ITHPP company

Since 2000
At CEA near Bordeaux in France
In charge of Pulsed Power R&D

What are Pulsed Power ?

High Voltage (kV to MV) AND High Current (kA to MA)
→ Huge peak power up to TW but only during ns to μs

Mainly used for :

- Material studies: shockwaves…
- Radiation sources: Z-Pinches, flash radiography
- Gigawatt Microwaves sources
- High power lasers
- Modulators
- Kickers

…

For any question, rendezvous at the bar !

Mission: Find new physics

40MHz clock

Largest HEP Experiment worldwide
25m x 44m

> 100M channels

Silicon pixel detectors

From ATLAS to ELENA – Because sometimes less is more

Jennifer Jentzsch
CERN TE-ABT-BTP

Up to 4 bunches in 20s

Deceleration to 100keV
(kinetic energy)

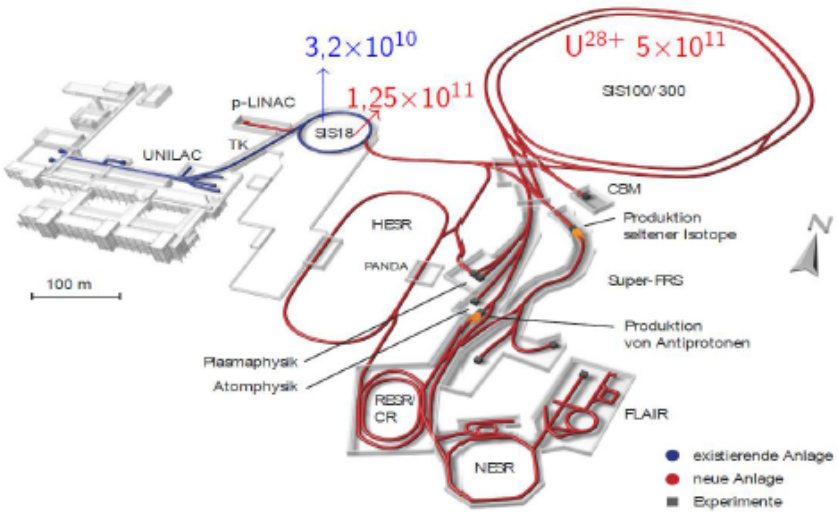
Electrostatic Elements

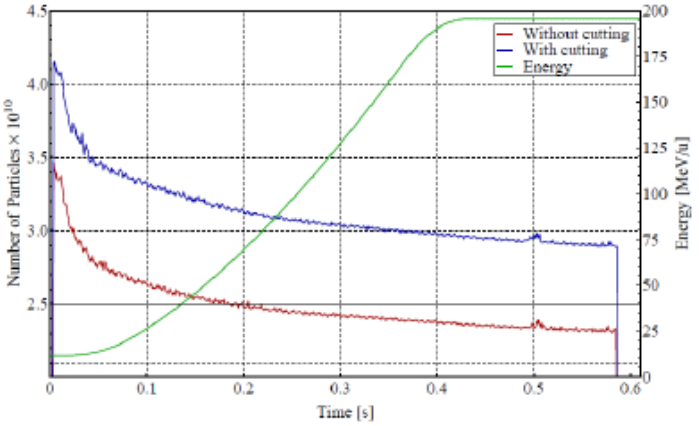
Antiprotons

Circumference ~ 30m

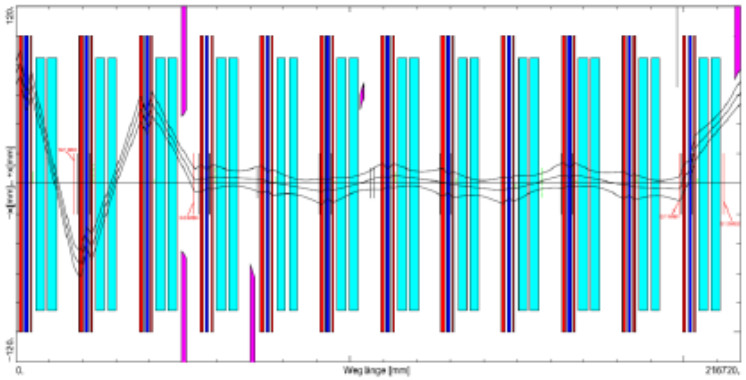
Transfer Lines > 90m

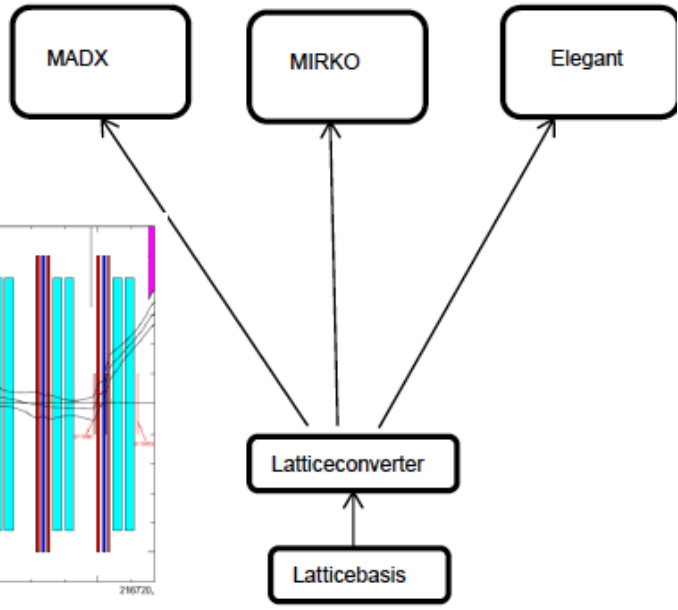
Youssef El Hayek





- The minimization of beam losses in SIS18 at injection has a special influence on the dynamic vacuum and the beam loss due to ionisation in the synchrotron. Initial losses increase and cause a pressure rise in the whole machine..



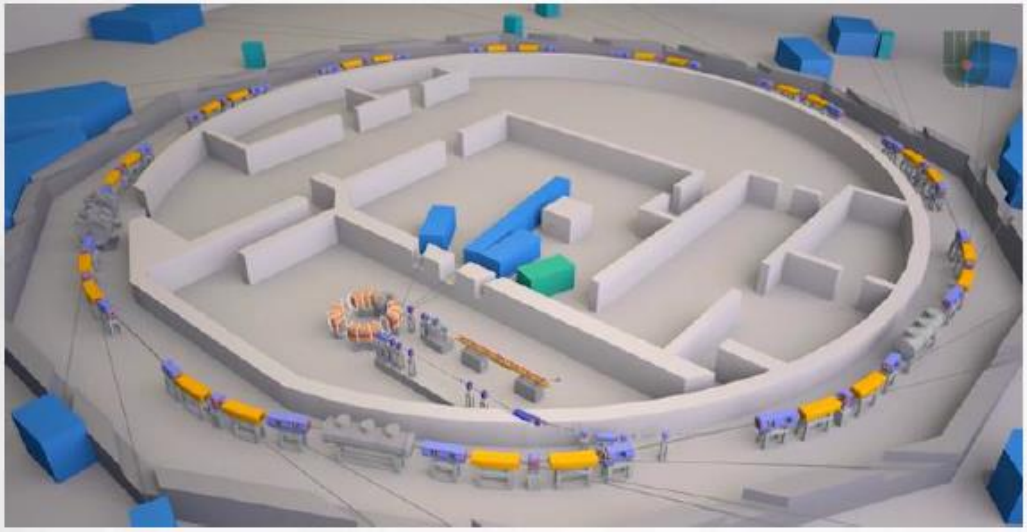


Yevgeniy Fomin

National Research Center «Kurchatov Institute», Moscow

Kurchatov light source department

Education: Master in Physics at Novosibirsk State Technical University and Budker Institute of Nuclear Physics



Research Interests

- beam dynamics
- control systems
- 3D electromagnetic design and analysis

Hobbies

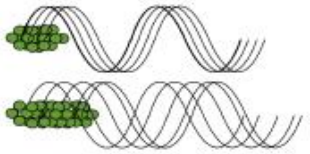
travelling and bike

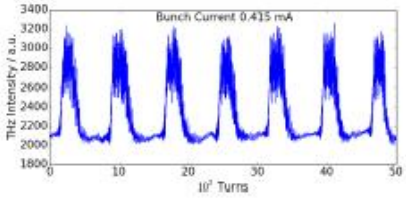
yafomin@gmail.com

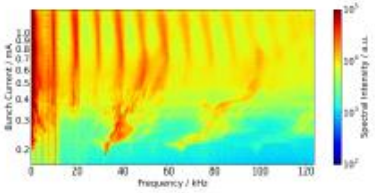
Miriam Brosi - ANKA

- Studied Physics at Karlsruhe Institute of Technology
- Bachelor thesis 2011 *Gainpattern of a LOPES 3D Antenna* (Prof. J. Blümer (IEKP), astro particle physics)
- Master thesis 2014 *A Study of Bursting Behavior of Synchrotron Radiation in the THz Regime* (Prof. A.-S. Müller (LAS))
- PhD since Jan. 2015 at ANKA (Prof. A.-S. Müller (LAS / ANKA))
  Systematic Studies of Multi-Bunch Longitudinal Beam Dynamics in the Generation of Coherent THz Radiation

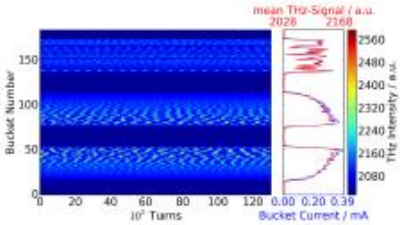
·Short electron bunches with (rms) bunch length down to 2 ps
→ Coherent synchrotron radiation in the THz range

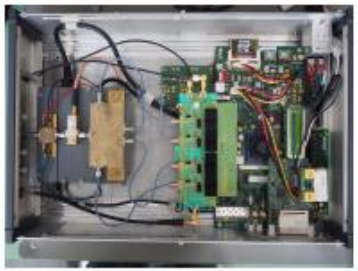






·Micro-bunching instability
·Multi-bunch effects





·Multi-bunch DAQ (KAPTURE [1])
·Fast THz detectors
(e.g. zero biased schottky diodes)

[1] M. Caselle et al., IPAC2014, Dresden, THPME113.

Edmund Blomley - ANKA

- Studied Physics at Karlsruhe Institute of Technology
- 4 years experience at ANKA:
  - 2011 – now: Hardware interface & control system developement
  - 2012 – 2013: Diploma thesis on beam loss studies
  - 2013 – now: PhD thesis on investigating beam instabilites using a 3D Bunch-by-Bunch feedback system
  - 2011 – now: Operating storage ring
- Hobbies: sailing, hiking, climbing, snowboarding, programming, gaming (board & computer games)

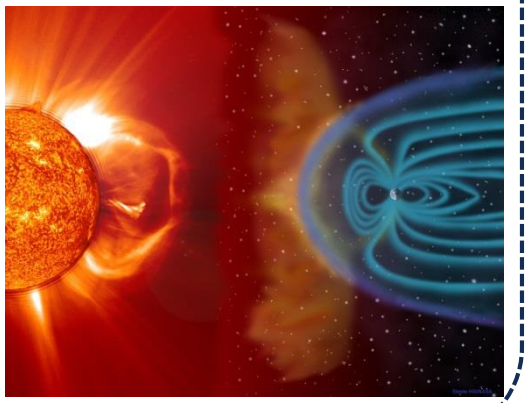

Drasko Draskovic, CERN

CHRIS WILCOX

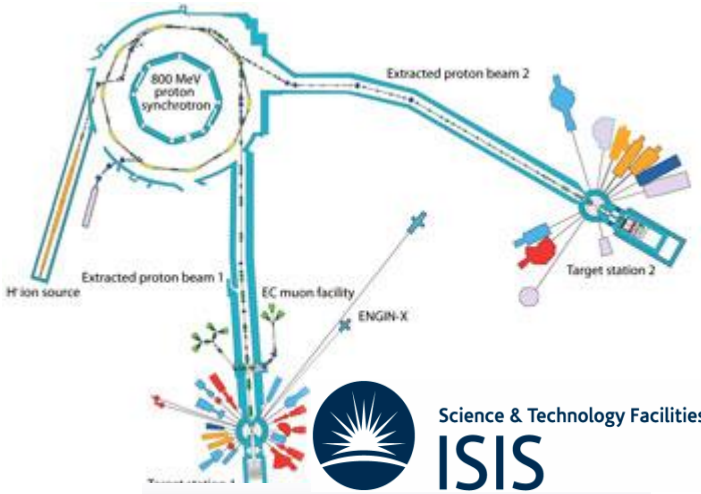
2006-2009
Bsc(Hons) Physics

UNIVERSITY OF BATH

2009-2010
Rutherford Appleton Lab
Space Weather Analyst



2010-Present
Rutherford Appleton Lab
Physicist - ISIS Diagnostics Section



Science & Technology Facilities Council
ISIS

And In My Spare Time…

Science & Technology Facilities Council

MANCHESTER 1824
The University of Manchester

MEng (Hons) Mechatronic Engineering

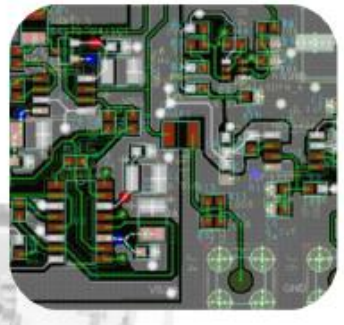
2005 - 2010

ROBOT WARS

BBC

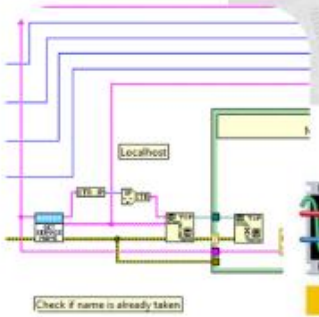
1987 - 2005

Science & Technology Facilities Council
ISIS



ISIS
Spallation Neutron Source
Rutherford Appleton Laboratory

Oxfordshire



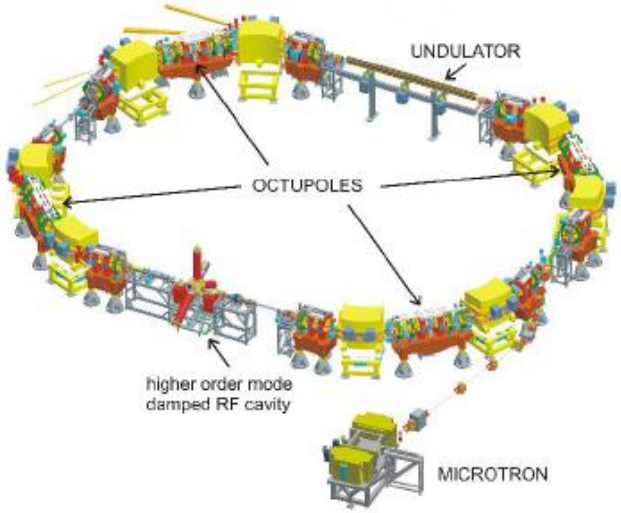
NATIONAL INSTRUMENTS
LabVIEW
Certified Developer

Ji Li
Postdoc at Helmholtz-Zentrum Berlin,
working for Metrology Light Source(MLS)

Background:
I. Pulsed HV thermionic guns and RF guns
II. Beam dynamics simulations of FEL injector

MLS:
A reference source in the Extreme Ultraviolte (EUV) regime for metrology applications

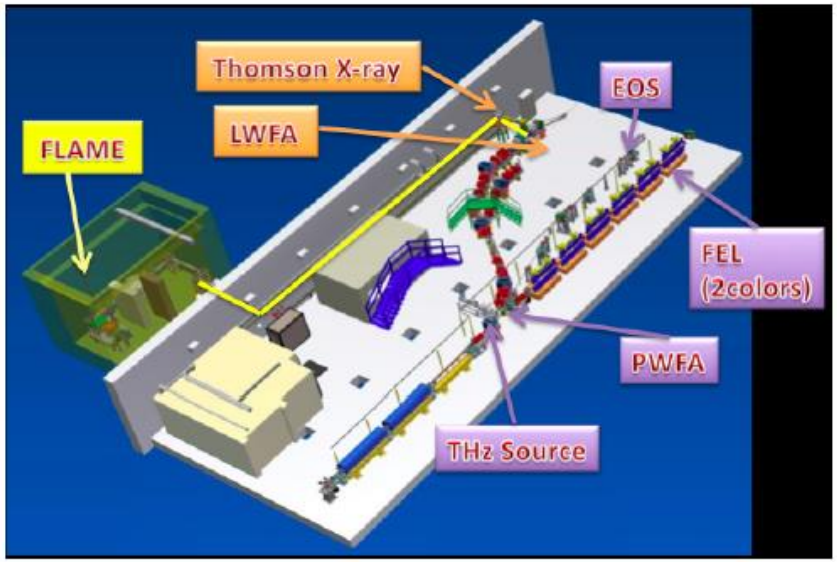
Task now:
- Operation and upgrade of MLS
- A new optics for users
- To know and learn from outstanding lecturers and nice colleagues at CAS



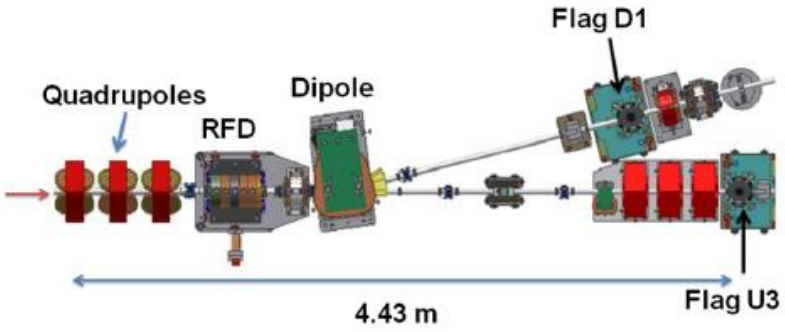
HZB Helmholtz Zentrum Berlin

PTB

The CERN Accelerator School



DIAGNOSTICS SECTION BEAM LINE



JESSICA SCIFO

SPARC LAB

INFN Istituto Nazionale di Fisica Nucleare

Laboratori Nazionali di Frascati

SAPIENZA
UNIVERSITÀ DI ROMA

Who am I?

Ishkhan Gorgisyan

PhD student at PSI/EPFL

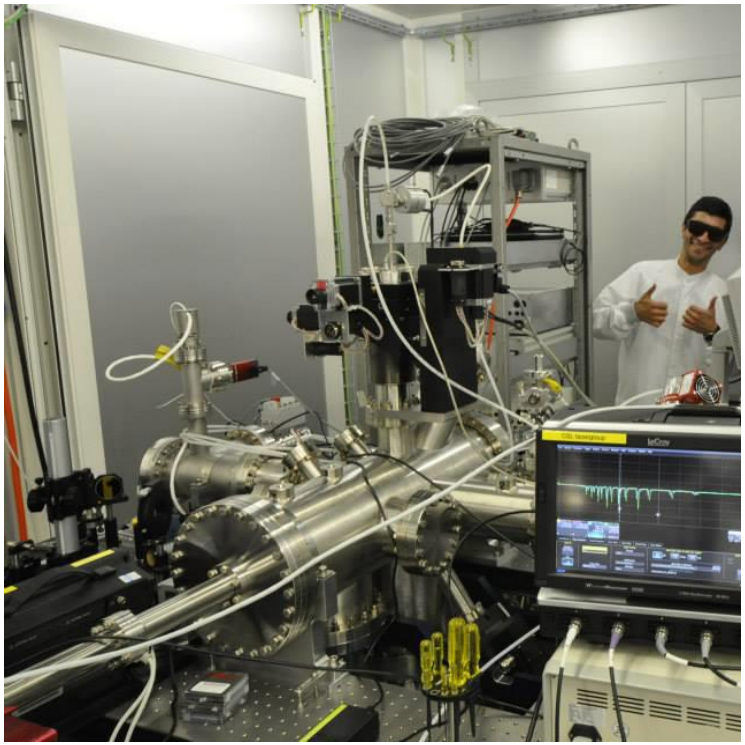
Thesis advisor: Leonid Rivkin

ÉCOLE POLYTECHNIQUE FÉDÉRALE DE LAUSANNE

PAUL SCHERRER INSTITUT

What do I do?

Photon diagnostics for SwissFEL using THz streak camera



What do I like?

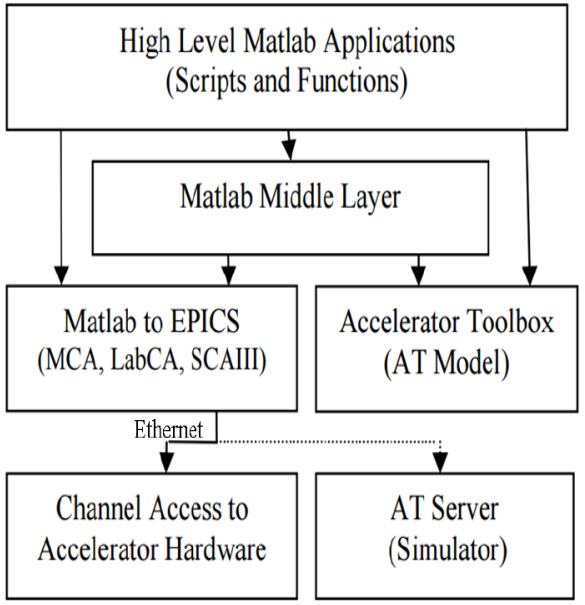
I like reading, music, football, snowboarding and sleeping

Jason Wu (Taiwan)

- Proton cancer therapy machine development:
  1. Control System Integrator
  2. Real time OS and Internet API development
  3. NI Labview and EPICS for accelerator application
  4. Treatment planning system SI
- Previous job:

  Qualcomm Inc.-RF SW engineer

  TSMC Inc.-Process Engineer
- Interest:
  1. Travel
  2. Movies



Kevin Lo – Engineer of beam dynamics

Present Roles:

- Engineer of proton therapy beam dynamics at zion biotech

Experience:

- Master of Physics, NTHU
- Design the photo cathode electron cavity at NSRRC
- Integration Engineer, TSMC

Interests:

- Mountain climbing, Riding bike

Future:

- Design an efficient and compact proton therapy

MPhys

Lancaster University

PhD

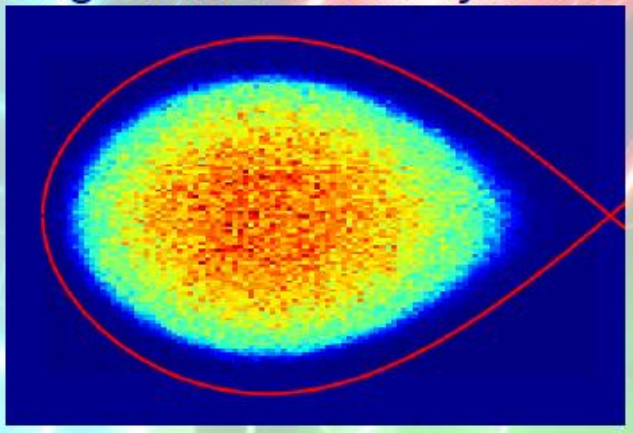
University of HUDDERSFIELD
Inspiring tomorrow's professionals

Fellow

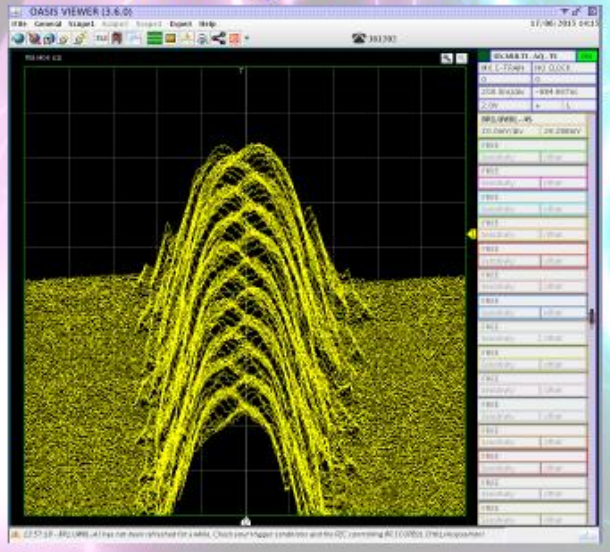
60 YEARS / ANS CERN

PS Booster (LHC Injector Upgrade)

Longitudinal beam dynamics

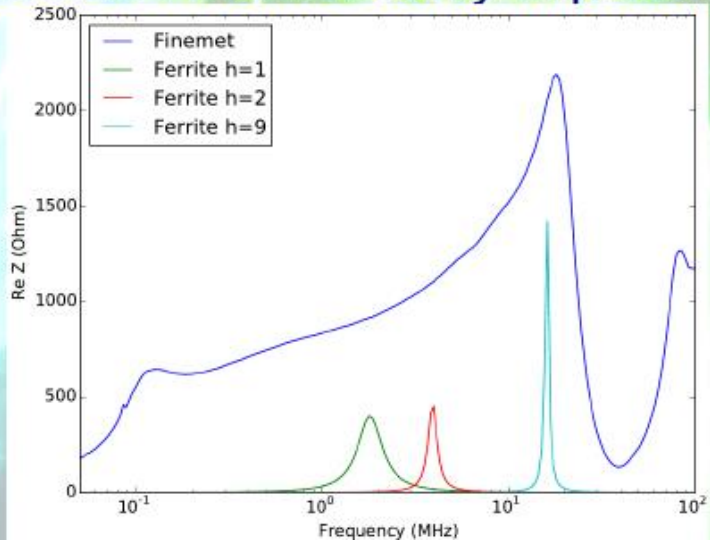


Beam stability measurements



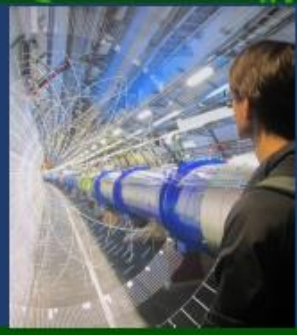
BLonD

Effect of Finemet cavity impedance

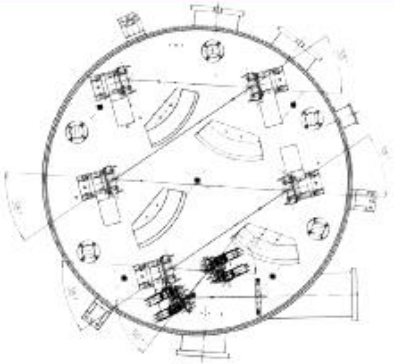


JAKUB OLEXA

DOCT. STUDENT @ **CERN** BE-BI-QP



My Task: Characterization of a THz Spectrometer developed for longitudinal electron bunch diagnostics



Present: Masters course in physics at the University of Hamburg
thesis at DESY

Future: PhD in the field of accelerator physics

Toke Kövener
DESY FLA/FEL
toke.koevener@desy.de

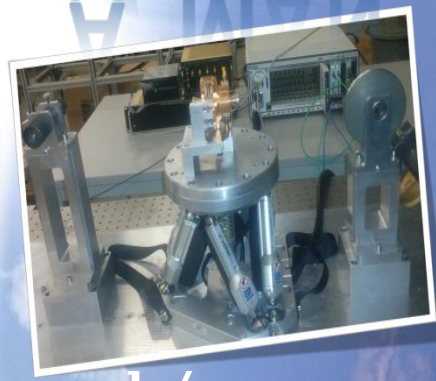
CAS
1slide/1minute

HELMHOLTZ ASSOCIATION

Universität Hamburg
DER FORSCHUNG | DER LEHRE | DER BILDUNG

DESY

PACMAN



cern.ch/pacman

Silvia

- Stefano Mazzoni
- At CERN Beam Instrumentation since 2012
- Transverse and longitudinal profile
- Projects: CLIC, LHC, AWAKE

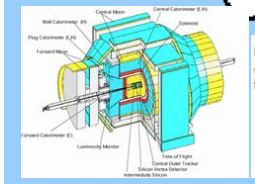
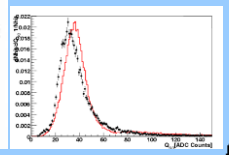
stefano.mazzoni@cern.ch

Harry Themann

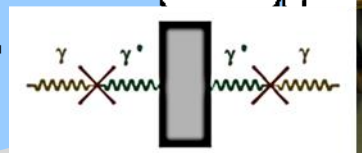
Center for Axion and Precision Physics
KAIST, Daejon, Republic of Korea
Yannis Semertzidis Director

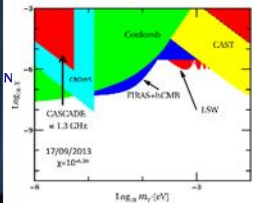
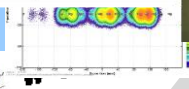
Axion Search, EDM, g-2 Muon

1990 Calorimeter development for SSC Lab
Instrument builder
Newcomer to the world of RF



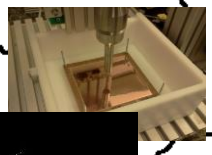
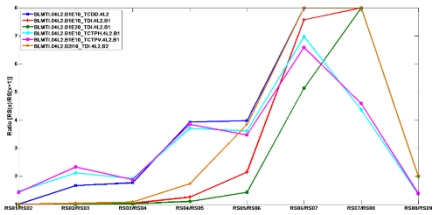
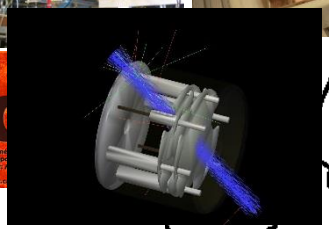
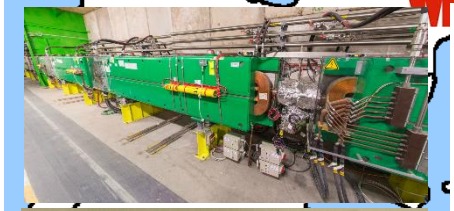
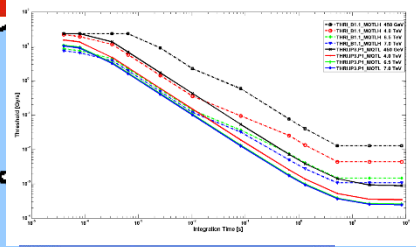



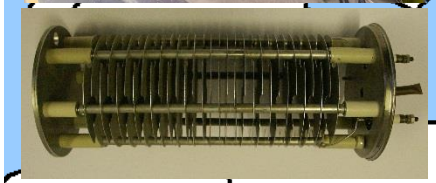
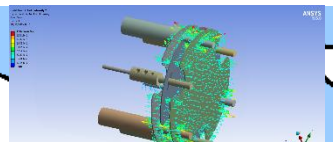


Coulomb
CAST
CROWN
PIRAS+bCMR
LSW
CASCADE
17/09/2013



The Cockcroft Institute
of Accelerator Science and Technology

NUSTAR

panda

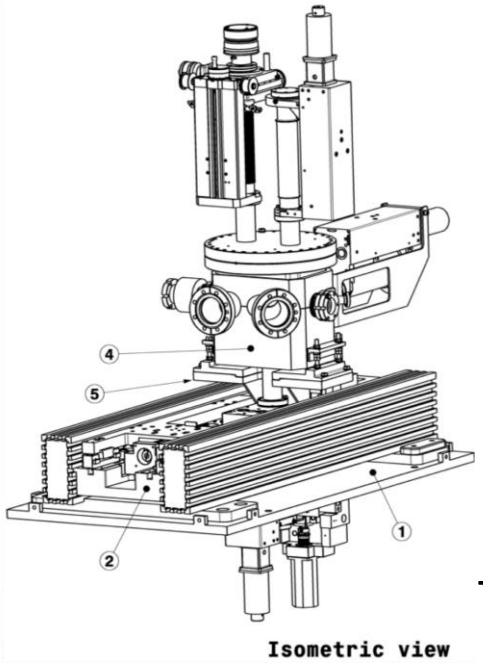







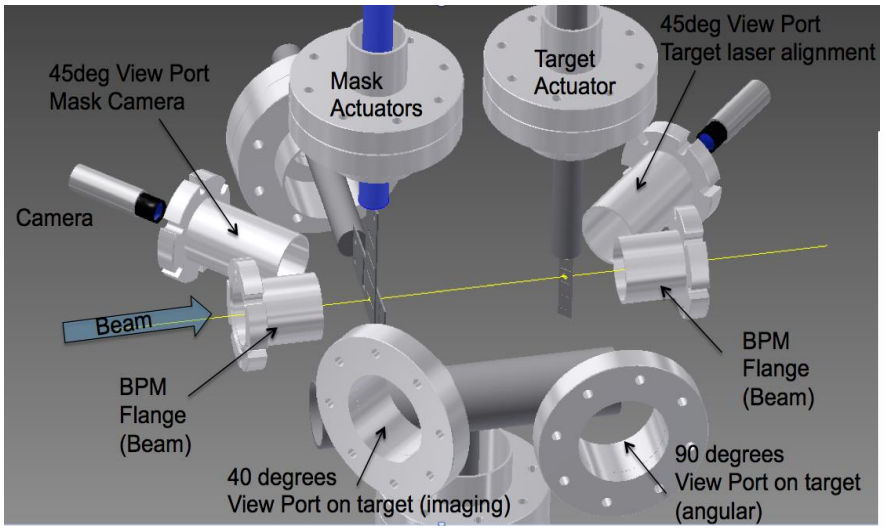
MoEDAL



Robert Kieffer

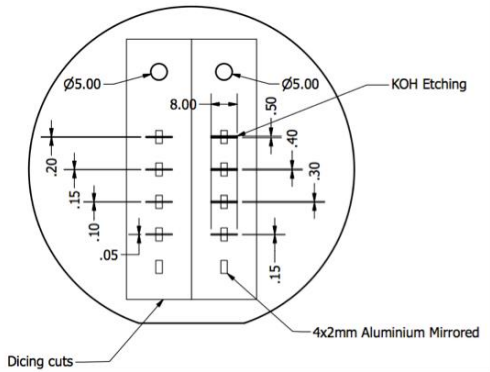
- Phd in HEP Lyon (2010)
- Post. Doc. Medical Imaging (Tera foundation cern)
- **Now:** CERN fellow in BE-BI-PM (since a year)

R&D for transition radiation profile measurement





Silicon Target @ EPFL
Nano-Technology Center



Tank to be installed on ATF2-KEK this spring

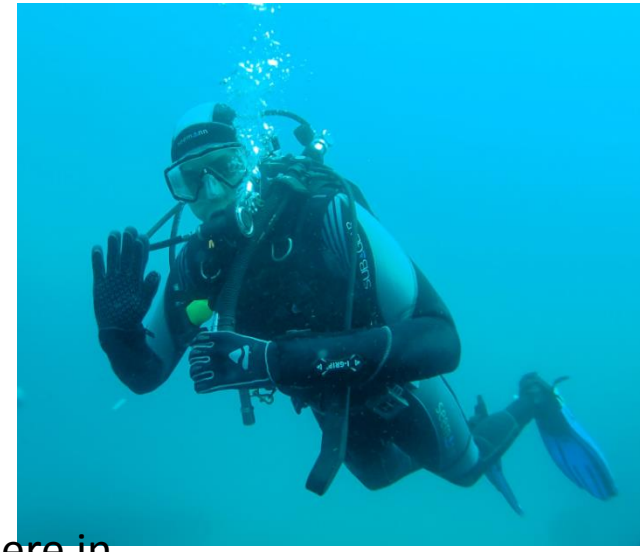
Michał Krupa

PhD student at Łódź University of Technology

Electronics engineering

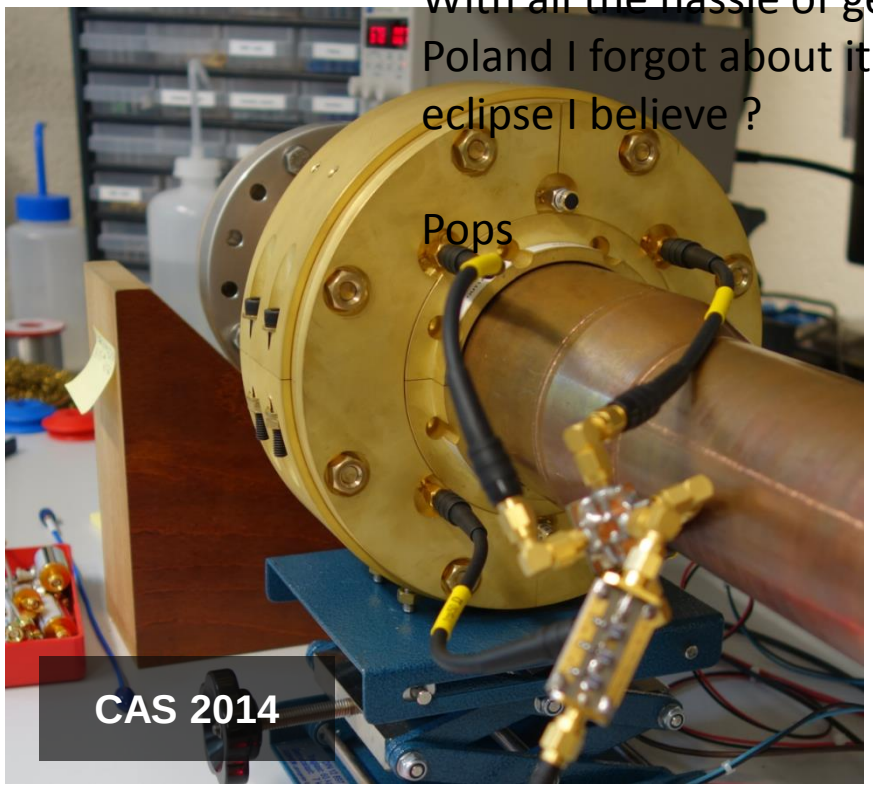
CERN Beam Instrumentation Group

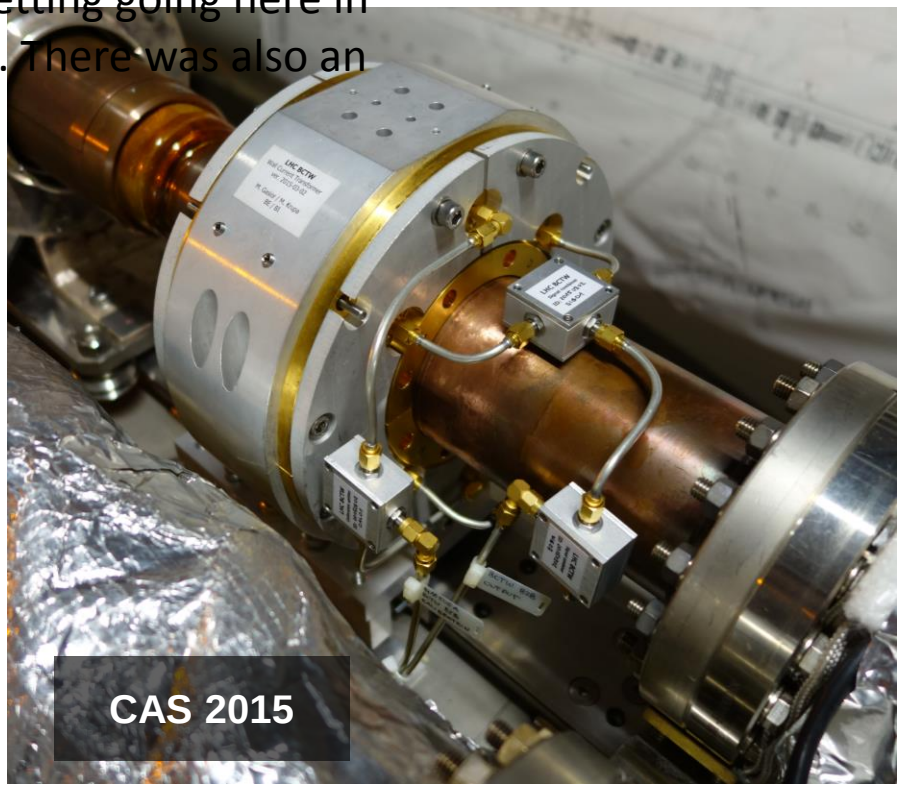
Fast Intensity measurements



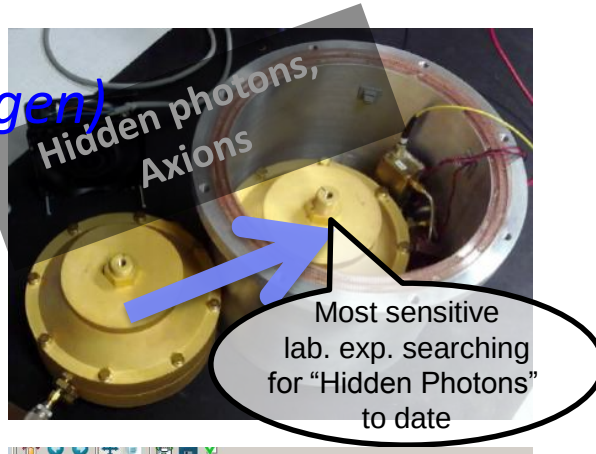
With all the hassle of getting going here in Poland I forgot about it. There was also an eclipse I believe ?

Pops





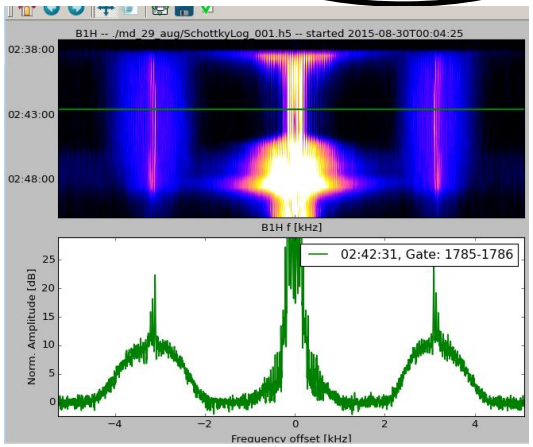
Michael Betz *(Germany / Reutlingen)*

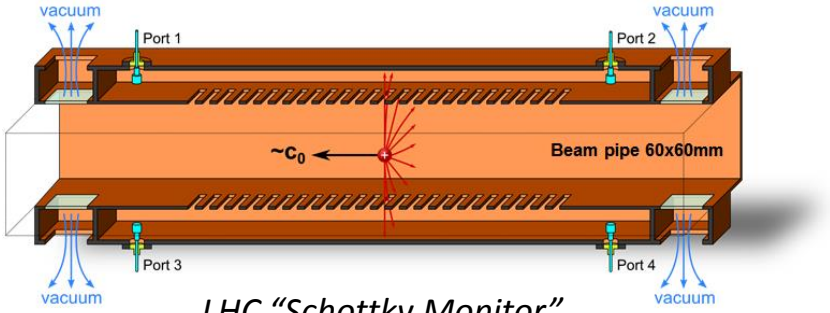


- 3/2009 – 10/2010: Master, Electrical engineering,
  Thesis: *RF Energy recovery in accelerators*

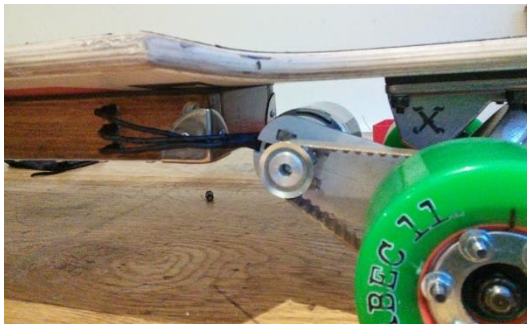
- 1/2011 – 1/2014: PhD at CERN,
  The "CROWS" experiment, search for dark matter

- 1/2014 – 5/2016: fellow at CERN
  LHC Beams Instrumentation





LHC "Schottky Monitor"



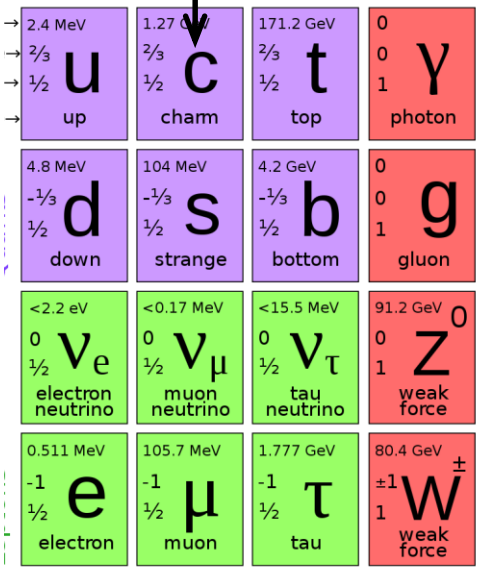
Work and Fun

Roger Bailey, Head of CAS

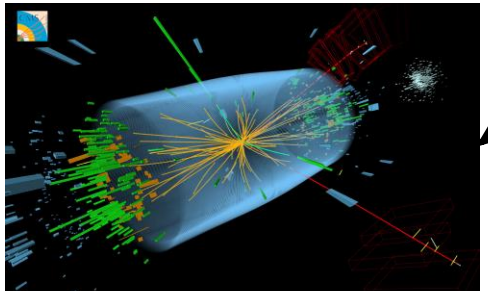
Just for Fun

28 years in Accelerator Operations (shifts, coordination, group leader)

6 years as PhD / Postdoc



06 years on SPS
12 years on LEP



10 years on LHC

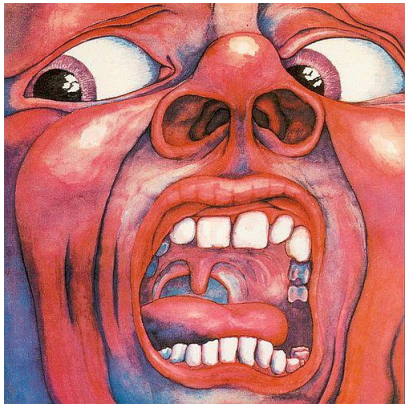
5 years as head of CAS

Played competitive football for 25 years

Downhill ski (off piste whenever possible) and ski randonee for almost 40 years (so far)

Enjoyed live contemporary progressive rock music for almost 50 years (so far)

- King Crimson (1969)
- Pink Floyd (1972)
- Van Morrison (1980)
- Oasis (1994)
- David Bowie (2002)
- King Crimson (2015)



Werner Herr, CERN

Study Univ. Heidelberg, PhD in particle physics
Arrived at CERN 1978
Since 1986 Accelerator physics (SPS,LEP,LHC)
Teaching at CAS since 2001
Deputy head of CAS since 2011

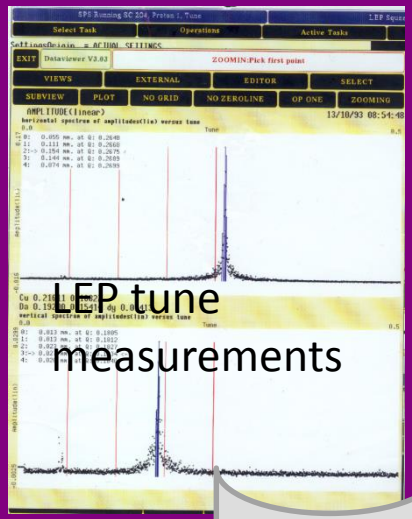
- Main activities:
  - x Non-Linear Dynamics
  - x Multi-particle effects
  - x Beam-Beam effects
  - x Sports and outdoor →

You will see me a lot at this school ...

CV of Fritz Caspers (for POLAND CAS 2015)

- Fritz Caspers was born in Bonn (Germany) Dec 12. 1950.
- He studied electrical engineering at the RWTH Aachen (Technical university Aachen(Germany) from fall 1969 until spring 1975.
- Afterwards (June 1975) he became “scientific assistant” at the “Institut für Hoch- und Höchstfrequenztechnik” of Bochum University (Germany) where he finished his PhD on “near field inverse scattering analysis of dielectric layers in the time domain” in spring 1975 (summa cum laude).
- During this period he was lecturing and gave tutorials on microwave technology, RF measurement techniques as well as theoretical electrodynamics and conducted or supervised a wide range of RF labs and also on optical fiber technology.
- Joining CERN in 1982 as a fellow he worked on cavity perturbation measurements and bench methods for beam coupling impedance.
- Since 1984 he became strongly involved in the stochastic beam cooling on all related CERN machines, was section leader for beam cooling and many years EiC (engineer in charge) for the AAC (antiproton accumulator complex).
- He serves in many review committees and also as reviewer for about 10 journals and since 1988 is lecturing for the CAS , USPAS and since 2002 also JUAS.
- Fritz has authored or co-authored 360 papers and holds about 30 patents or patent applications. He is senior member of the IEEE.
- Recently he became interested in microwave based dark matter search.

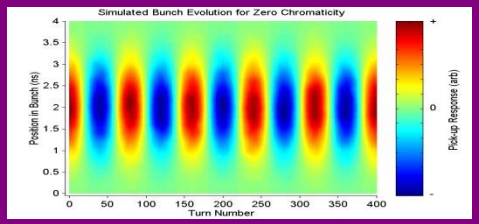
All is in the delicate balance of life



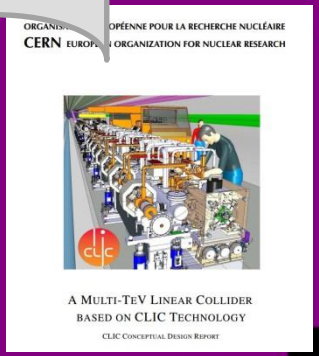
LEP tune measurements

LHC-HiLumi Project

Hermann Schmickler
58 years old
Former head of CERN beam instrumentation and controls



Chromaticity Measurement using head-tail motion



CLIC-CDR

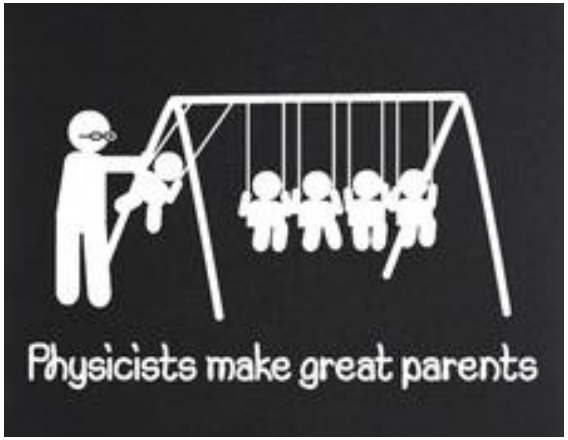
Live Sound

HiFi

Kay Wittenburg: Career

- Start at DESY 1985
- Since 1999 head of Beam Instrumentation Group MDI at DESY

Private



1963 - …

Hobbies

Marek Gąsior

- electronics engineer
- M.Sc. and D.Sc. from AGH University of Science and Technology, Krakow
- since 2000 at CERN in Beam instrumentation Group
- specialisation in:
  - electromagnetic sensors of beam position and intensity
  - electronics for processing beam signals (position, tune, intensity)
- www.cern.ch/gasior/pro