

# One slide - One Minute

Presentation of Students and Lecturers

At the CAS-BI course in Tuusula (FI), June 2018

# Students

In groups of 5 or 6 people come forward

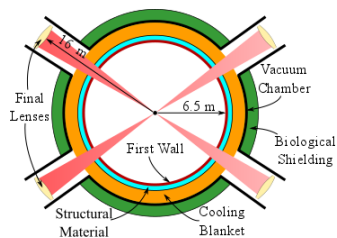
- Ángel Rodríguez Páramo
- Anna Sledneva
- Gabriele Brajnik
- Thiemo Schmelzer
- Mathieu Saccani
- Sascha Enke



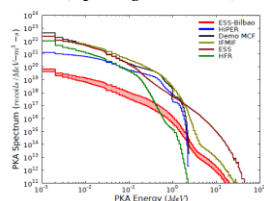
# Ángel Rodríguez Páramo

**Industrial Engineering in ETSII-UPM**  
**PhD in Nuclear Science and Technology**

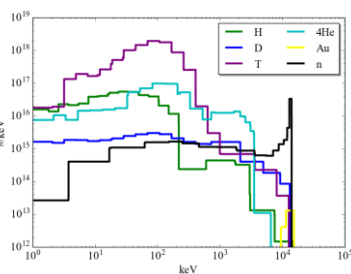
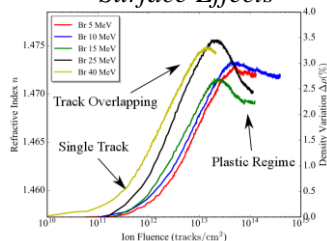
**PhD Thesis:** *Effects of irradiation on plasma facing materials in HiPER Laser Fusion Power Plant: Silica Final Lenses and Tungsten First Wall*



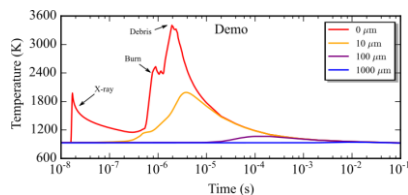
**Irradiation Characterization**  
 (dpas, gas, PKAs)



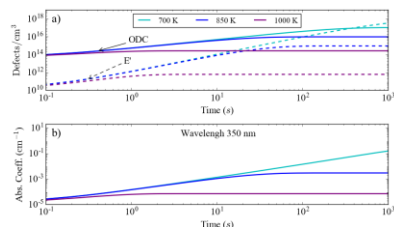
**Surface Effects**



**Thermo-Mechanical Response**



**Colour Centres**

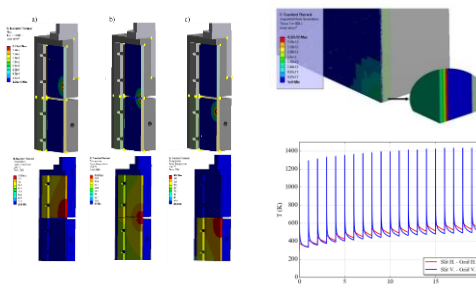


**PBI Group ESS-Bilbao**

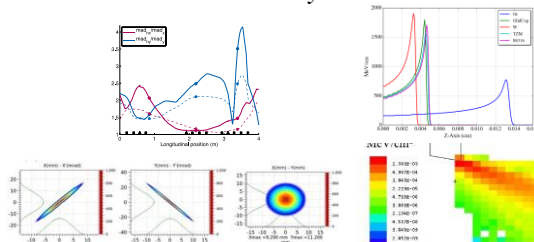
**ESS-Bilbao:** *Design and manufacturing of the ESS MEBT PBI: Faraday Cup, Wire Scanners, Scrappers and Emitance Meter Unit. Mechanical (CATIA) thermomechanical (Ansys) irradiation effects (SRIM, MCPNX) analysis , product specifications and project follow-up.*

Design

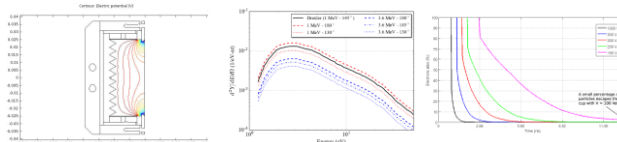
**Thermo-Mechanical**



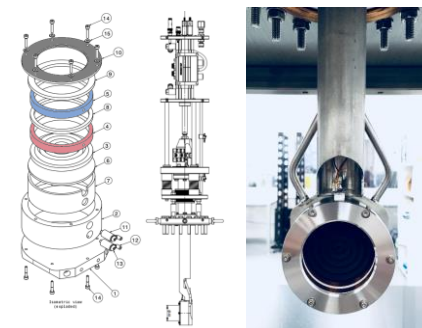
**Irradiation Analysis**



**Secondary Electron Emission**



Manufacturing

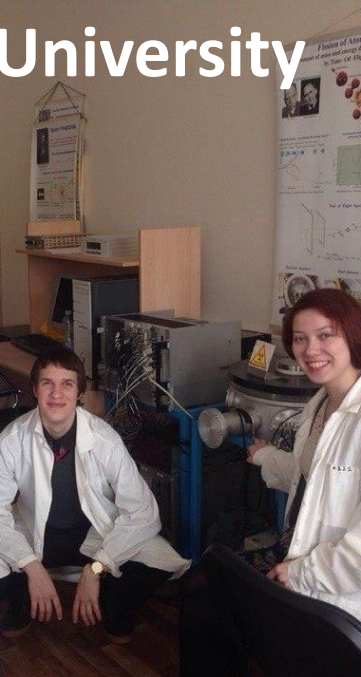


Tests & Integration



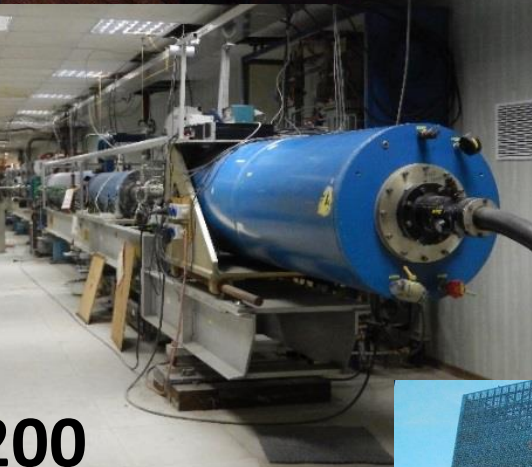
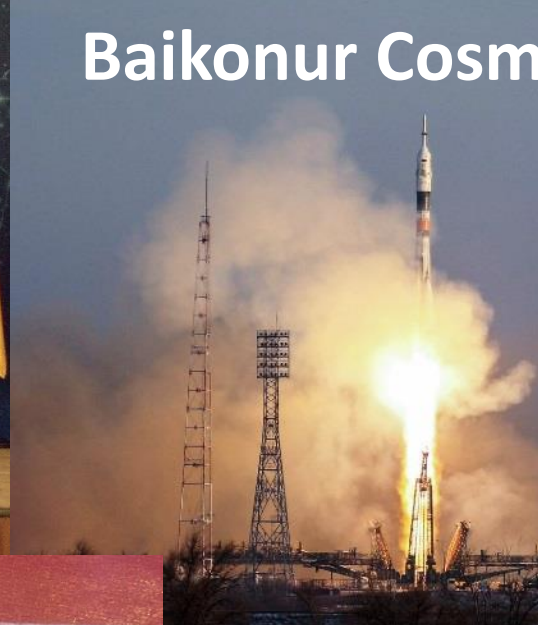


University

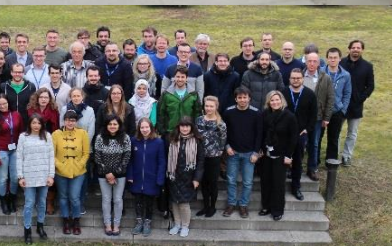


Joint Institute for Nuclear Research

Baikonur Cosm



200



Ekaterinburg



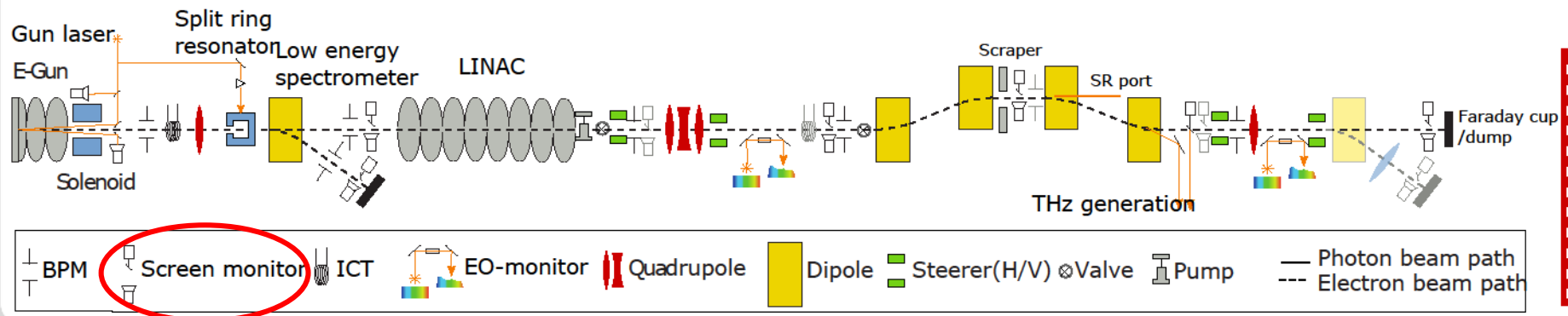


# Gabriele Brajnik

- 31 years old, from Trieste (Italy)
- Electronics engineer
- Focused on FPGA programming and RF design
- Since 2013 with Detectors and Instrumentation Group at Elettra
- PhD on eBPM based on pilot tone compensation
- Currently working on new eBPMs for Elettra 2.0
- Hobbies:
  - Playing synthesizers in a '80s Rock cover band
  - Photography

# Thiemo Schmelzer

- Studied physics in Karlsruhe
- Master's thesis at the Laser system of the new linac FLUTE
- Playing saxophone in a music orchestra and various small bands
- Ph.D. student since last December, focus on beam diagnostics for FLUTE



# Mathieu Saccani

- **Engineer in Electronics and Digital Communications** (Paris)  
FPGA - Semiconductors - Mixed Signals - Digital Communications
- **Master Research in Radio-Telecommunication Systems** (Paris)  
Telecommunication Theory - Coding - Wireless Communications - Networks
- **Digital Electronics Designer** (Paris)  
Satellite On-Board Computers & Space Radio-Com Systems
- **ASIC-FPGA Design Team leader** (Paris/London)  
Missile embedded On-Board Computers – FR/UK team
- **Digital Designer for BLM System (BE-BI-BL)**  
New update of the LHC-BLM processing board (VFC-HD)  
New update of the SPS and LHC BLM Acquisition Tunnel Board





- **Name: Sascha Enke**
- **Company: MedAustron**
- **Occupation: Electrical Engineer**
- **Department: Electronics (Beam Diagnostics)**
- **Recent Projects: Tune, PIN**

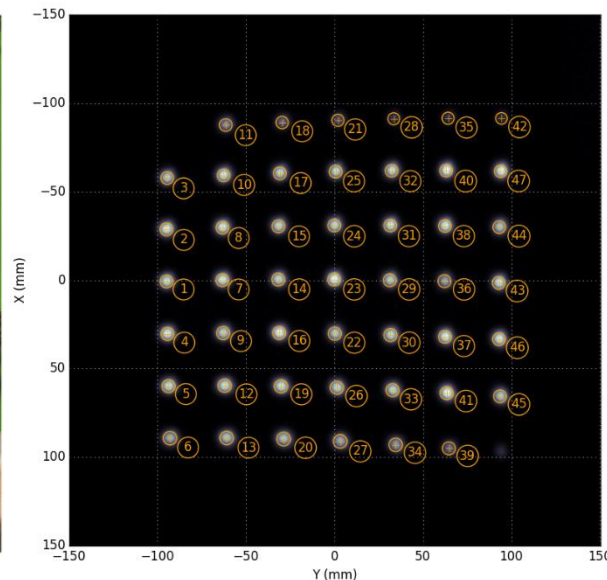
- Fabio Farinon
- Faye Hendley Elgart
- Gevorg Zanyan
- Jochen Schreiner
- Liu Xiaoyu
- Jernej Podlipnik

- **Accelerator physicist**
- **Commissioning and development**

## MedAustron

Ion Therapy Center

- **Interests:**
  - Magnets conditioning
  - Beam physics (simulations + measurements)
  - Beam diagnostics
  - “Medical” beam diagnostics
- **See poster!**





# Faye Hendley Elgart

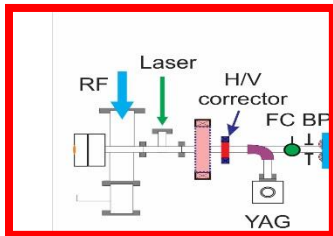
- Cornell University Applied & Engineering Physics
  - Photocathode development at CLASSE under Ivan Bazarov
- Currently: Systems Engineer at ProTom International
  - Small, 70-330 MeV proton synchrotron with 1-room gantry nearing completion at Massachusetts General Hospital
- Speaks: English, français, чуть-чуть по-русски
- Future: PhD program in physics(?), climate science(??)
- Other interests: instrumentation, experiment design, interferometry, gravitation, cosmology. Small satellites, Middle English, great apes, birds.



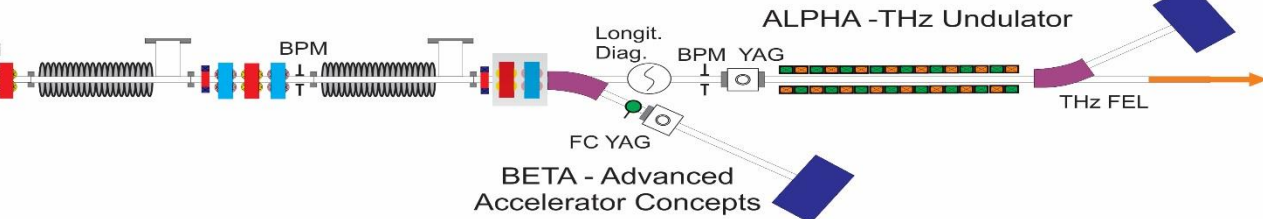
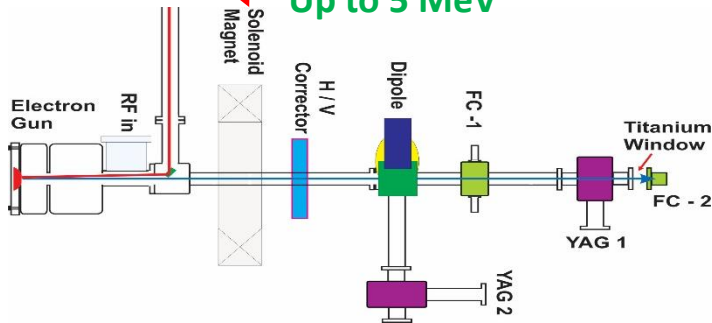
# Gevorg Zanyan

(PhD student at CANDLE SRL Armenia)

## GUN section

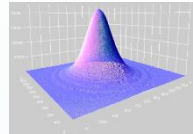


Up to 5 MeV



Beam parameters	Value	Method
Beam profile	6x6	YAG:Ce crystal
Beam charge	200-650 pC	Faraday Cup
Energy	2.5-5 MeV	Dipole spectrometer
Energy spread	< 2%	Dipole spectrometer

# Beam Instrumentation at HIT

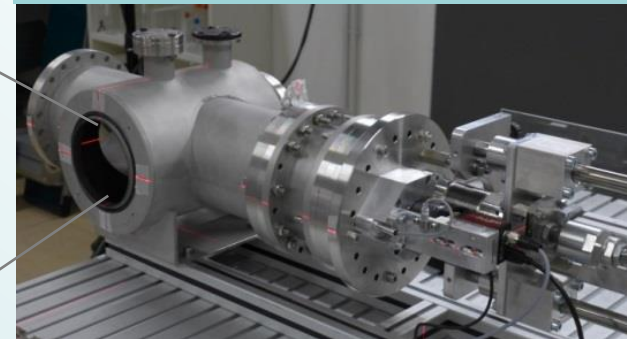


Device	Qty.	Class
Faraday Cup	7	DC/AC beam current
Profile Grid	8	Spot size / position
DC Transformer	4	DC beam current
Pick up	4	Energy
AC Transformer	4	AC beam current
Position Monitor	6	Beam position
Beam Loss M.	6	Particle counting
Ioniz. Chamber	13	Particle counting
<b>Viewing Screen</b>	<b>12</b>	<b>Spot size / position</b>
Scintil. Counter	5	Particle counting
MWPC	13	Spot size / position
Isocenter Diagn. Screen	2	Spot size / position



Beam Spot on P43 Target

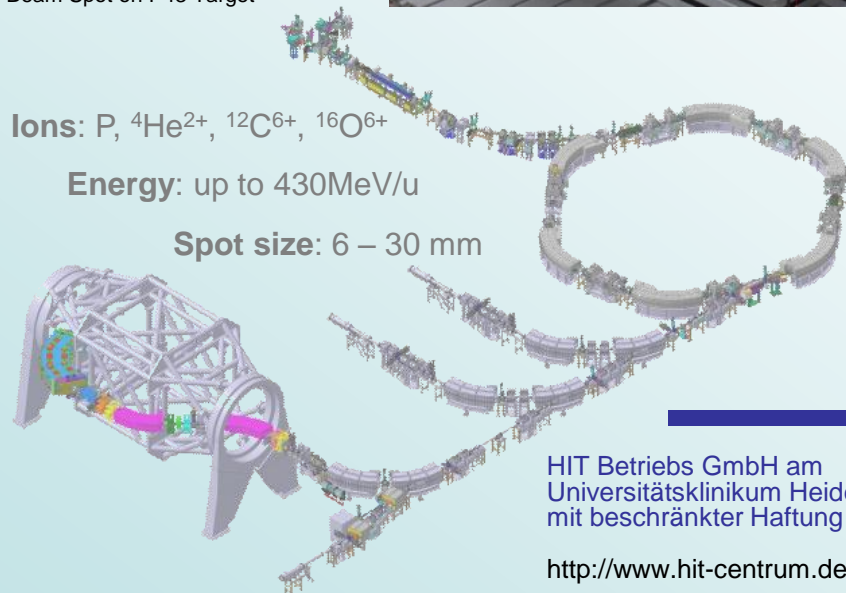
Test setup: Viewing Screen with GigE Cam



Ions: P,  $^4\text{He}^{2+}$ ,  $^{12}\text{C}^{6+}$ ,  $^{16}\text{O}^{6+}$

Energy: up to 430 MeV/u

Spot size: 6 – 30 mm



HIT Betriebs GmbH am  
Universitätsklinikum Heidelberg  
mit beschränkter Haftung

<http://www.hit-centrum.de>



**Liu Xiaoyu**  
**刘 啸宇**

Nationality:

- P.R. China

Status:

- Ph.D. student

Affiliation:

- USTC (University of Science and Technology of China)
- PSI (Paul Scherrer Institut)

Work:

- Button BPM
- THz-driven streak camera
- Beam-driven THz diagnostic device



# Jernej Podlipnik



❑ From Slovenia

❑ Working at Cosylab

❑ Electrical Engineer

❑ Was working at CERN for 6 months



Your **TRUSTED** Control System Partner

- Jun He
- Laura Torino
- Gerhard Schneider
- Carsten Müller
- *Moussa EL AJJOURI*
- Șerban Udrea





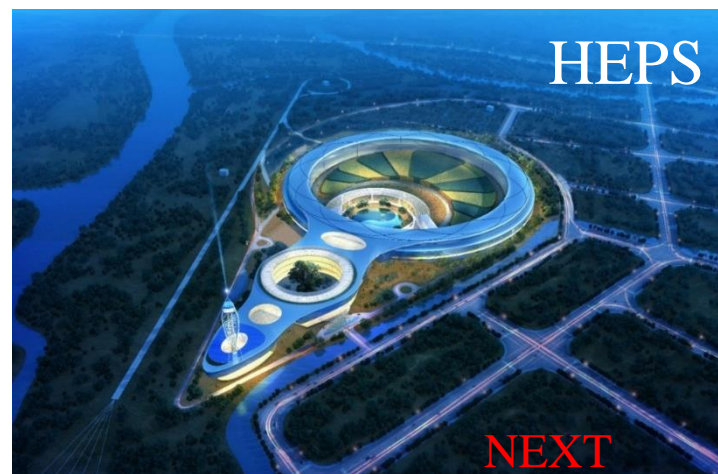
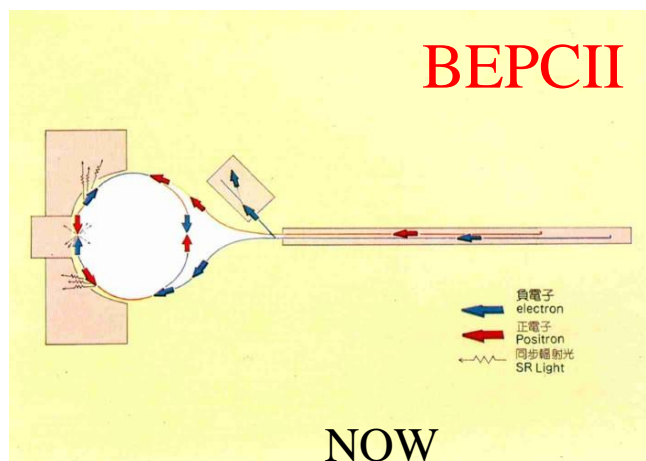
中國科學院高能物理研究所  
Institute of High Energy Physics  
Chinese Academy of Sciences



Jun He

Beam Instrumentation Group P. R. China

The **Beijing Electron Positron Collider** is a two-ring  $e^+e^-$  collider running in the tau-charm energy region ( $E_{\text{cm}} = 2.0 \sim 4.2$  GeV), which with a luminosity of  $1 \times 10^{33} \text{ cm}^{-2}\text{s}^{-1}$ .



The **H**igh **E**nergy **P**hoton **S**ource, a 1360 m storage ring light source, with a beam energy of 6 GeV and transverse emittances of 60 pm rad is to be finished in Beijing before 2025.

My personal task including the BPM pick up design, purity measurement and so on. The details will be introduced in poster session.

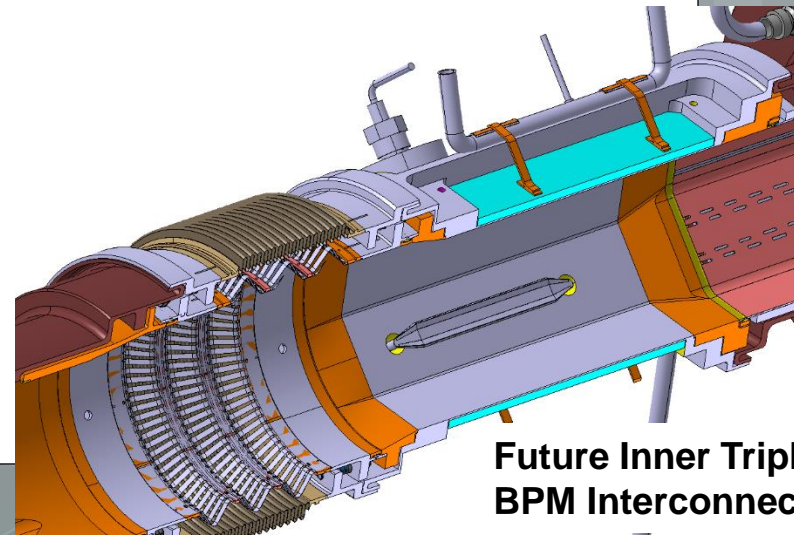
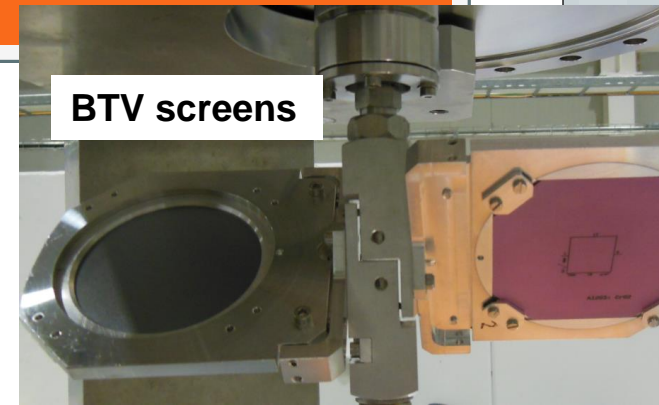
# Laura Torino





## Gerhard Schneider CERN BE-BI

- Mechanical Engineer
- CERN Beam Instrumentation Mechanics since 2012
  - BTV: beam hits target, spot is optically visualised
  - BPM: Beam Position Monitor Body
  - BGC: Beam Gas Curtain, quasi-planar gas sheet overlap monitor of 2 concentric particle beams using fluorescence
  - BGI: Ionisation profile monitor housing and installation
  - Asset management
- CERN Beam Vacuum 1995-2012
  - Work on LHC beam vacuum interconnects
  - LHC experimental beam pipes (ALICE)
  - BPM body design and manufacture
  - Design and layout of vacuum systems
  - Vacuum qualifications and tests
- Running, Swimming, Music



Future Inner Triplet  
BPM Interconnect

- Working in GSI-Beam Diagnostic Group since 2003
- Hired for setup BD- Systems at medical Accelerator HIT in Heidelberg, Germany for treatment of cancer until 2012
- Member of Sub-Group „LOBIED“ for electronic development of BD under H. Reeg
- Nominated for caring for group interest in questions of buildings and infrastructure at upcoming FAIR project
- Groups cable management for new FAIR project
- Managing realization of special mains power sources as Uninterruptible Power Supply (UPS) and Clean power Supply (CPS)
- Update project at current frequency converter IFC



*Moussa EL AJJOURI*

- *Engineer in Diagnostics group*
- *Graduated in electronics, with a radiofrequency specialization*
- *Beginning of professional career in the space industry as technician for RF satellite payload testing*
- *Integrate RF group in the SOLEIL synchrotron in 2004 as electronic technician.*
- *Participate in the installation of the RF system for SOLEIL synchrotron.*
- *At the same time, I prepared a diploma of engineer in electronics and radiofrequency.*
- *Move then in the diagnostics group as RF electronic engineer in 2012, involve in the development and operation of diagnostics systems, and in charge of the conception and design of Beam Position Monitors, Stripline kicker etc...*





# Șerban

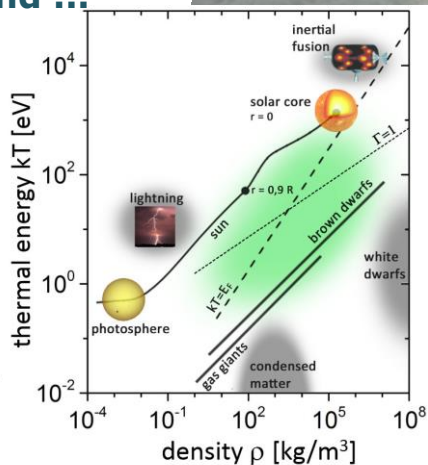
# Udrea



Relocated in  
Darmstadt, Germany  
1998

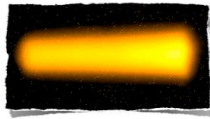
Work on  
warm  
dense  
matter  
and ...

Most of the time  
researching at GSI ...



**Warm Dense Matter**

- $T \sim 0.2 - 10$  eV
- $\rho \sim$  solid density
- $P \sim$  kbar, Mbar

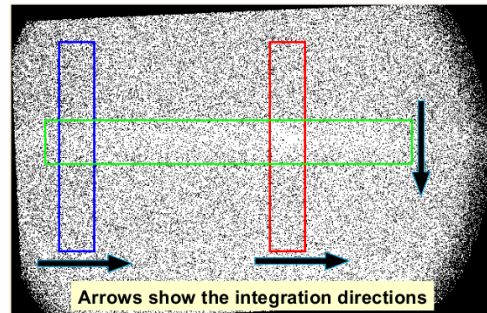


intense uranium beam  
heating tungsten foil

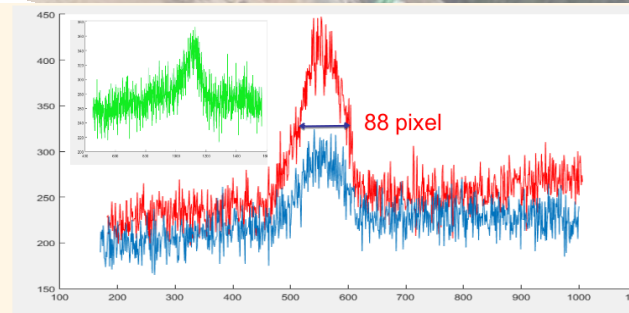


... but also active at TU Darmstadt,  
U Frankfurt and FIAS.

... beam instrumentation



Arrows show the integration directions



- Victor Langlois
- Cornel Dinu Cîrdei
- Mauricio Ayllon Unzueta
- Uroš Legat
- Vincent Chaumat

Langlois Victor

victor.langlois@ganil.fr

PhD student in Beam Instrumentation at GANIL, France



PhD in Beam Instrumentation on “Study and characterization of the SPIRAL2 BPM”:

- Electromagnetic calculus
- Uncertainly calculation
- BPM behavior simulation on Matlab
- Under beam experiment
- Electronic characterization

Skills:

- Physics
- Matlab
- Mechanics
- Engineering
- Basics in RF
- Basics in electronics





Horia Hulubei National Institute for  
R&D in Physics and Nuclear  
Engineering (IFIN-HH)



Extreme Light Infrastructure -  
Nuclear Physics

**Name: Cornel Dinu Cîrdei**

Studies: Electrical Engineering

Specialization: Measurements & Instrumentation

Experience:

- Control and Operation of Power Systems
- Smart metering
- Energy storage

Current position: Electrical Engineer in charge with Electron Beam Diagnostics

Research Activity: "High brilliance gamma beams" dedicated to the development and operation of a high flux, high brilliance, monochromatic, energy tuneable gamma-beam production system

Mission at the moment: Acquiring the necessary knowledge and experience to ensure the proper functioning of the diagnostic systems and the related equipment

**Beam Instrumentation Course, 2-15 June 2018, Tuusula, Finland**



Name: Mauricio Ayllon Unzueta



Birthplace: La Paz, Bolivia



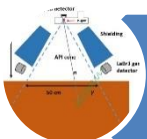
PhD Candidate at UC Berkeley (USA) – Nuclear Engineering



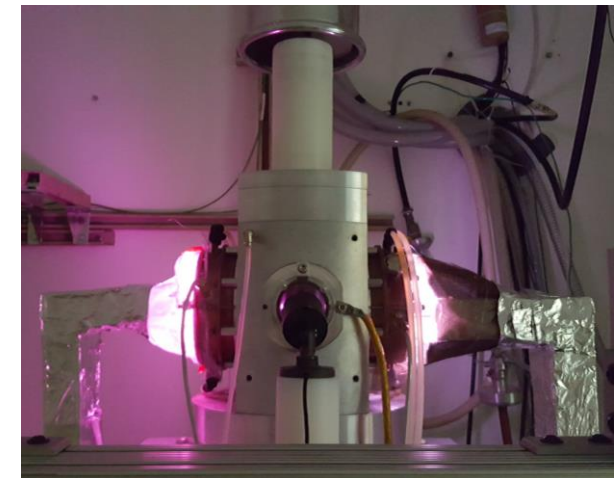
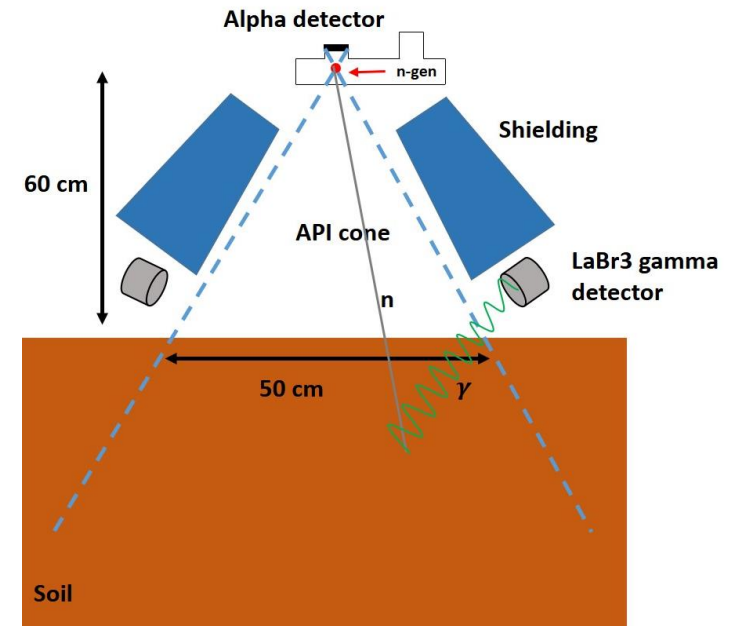
Masters from ETH-EPFL (Switzerland) – Nuclear Engineering; Bachelors from Eastern Michigan University (USA) – Physics, math



Current projects: 1) High-flux neutron generator design and construction (UC Berkeley)



2) Associated particle imaging of carbon in soil (LBNL)





# Uroš Legat



## Technologies:

- FPGA (EPICS, LabView)
- Timing Systems
- Machine Protection Systems
- Beam Diagnostics
- FPGA Academy Mentor
- FPGA Architect

## Clients:



Your **TRUSTED** Control System Partner

# Vincent Chaumat.

Laboratoire de l'Accélérateur Linéaire



Job Field:

Around Photo-Injector RF GUN

- Low Level RF source
- Timing system
- Beam Diagnostics (ICT, Faraday Cup, WCM, Yag screen)
- High stability synchronisation (for Laser Plasma Wakefield acceleration)

Around Photo-detector

- Test bench developpement (tens of ps resolution time, 10% absolute PDE)
- SiPM, PMT, MCP-PMT characterization : dark noise, gain, SPTR
- CpFM for UA9 (in vacuum Cherenkov beam monitor in SPS)
- Cherenkov lab : generic studies on detectors based on Cherenkov light



- Liu Xiaoyu
- Jan Pospíšil
- Aurore Dumancic
- Daniel Harryman
- Axi Holmström
- Chris Wilcox

**Liu Xiaoyu**  
**刘 啸宇**

Nationality:

- P.R. China

Status:

- Ph.D. student

Affiliation:

- USTC (University of Science and Technology of China)
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Work:

- Button BPM
- THz-driven streak camera
- Beam-driven THz diagnostic device

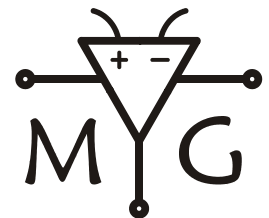


# Jan Pospíšil

j.pospisil@cern.ch



- Czech Republic
- Digital electronic background
  - Field Programmable Gate Arrays (FPGA)
  - High speed communication
  - Digital Signal Processing (DSP)
- Fellow at CERN, BE-BI-BP (LHC Interlock BPM project)
- Hackerspace MacGyver at CTU, Prague
  - Founder member
- Hiking, swimming, 3D-printing, electronics...



MacGyver – bastlíři SH



# Aurore DUMANCIC

25yo 2<sup>nd</sup> year PhD Student  
CEA-Irfu France (Saclay)

Particles accelerator  
Protons source  
Diagnostic  
Emittance meter

## A brief career history...

2y technical diploma in  
Physics measurement

➤ CEA internship (Diagnostics)

**Engineer School in Mechatronics**

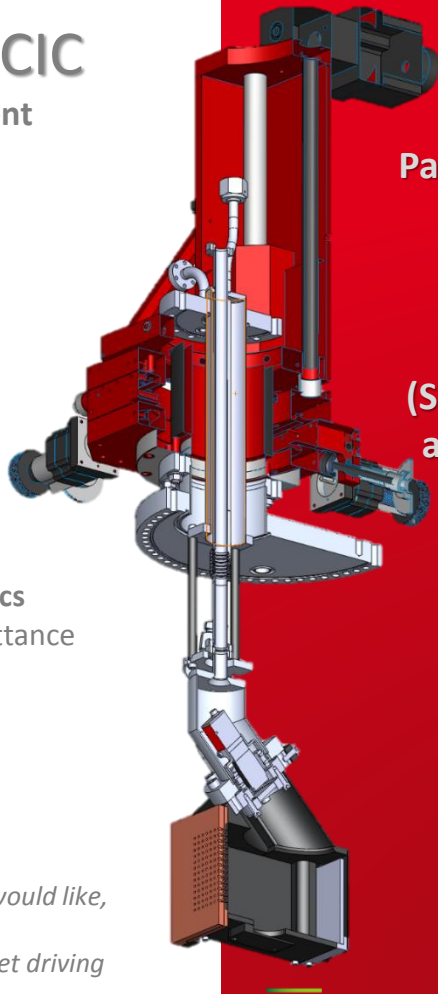
➤ CEA half time work (4D emittance  
meter and diagnostics)

**PhD in Accelerator Physics**

➤ CEA full time work  
(4D emittance meter)

## If you can help me :

- I'm not as fluent in English as I would like, especially speaking.
- I've started lessons in order to get driving license. I need to train at starts ....



Physics Particles

Particles simulation  
(TraceWin)

Control and monitoring  
program (LabView)

CAD  
(SolidWorks  
and Catia)

Thermomechanics  
study (Comsol)

Hydraulics

Mechanics

Books Travel  
Sewing Gym  
Film TVserie

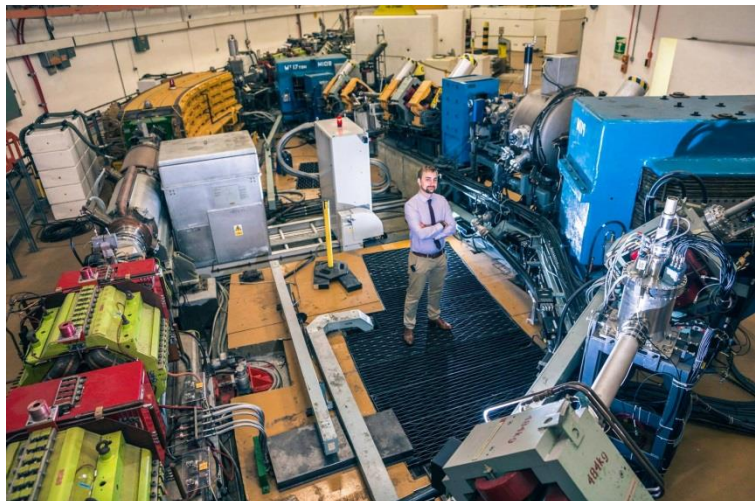


Trekking  
Running  
Mosquitoes

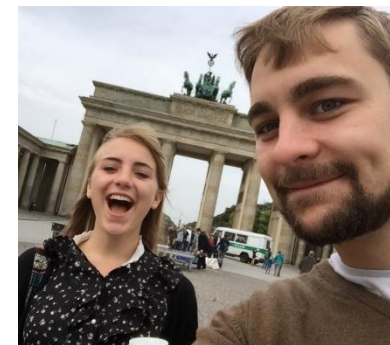
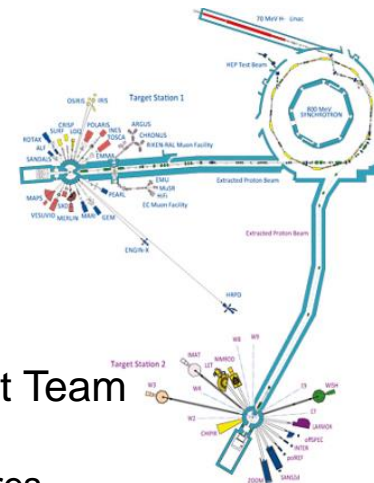
[aurore.dumancic@cea.fr](mailto:aurore.dumancic@cea.fr)



# Daniel Harryman



- MEng Electronic Engineering
- Works For ISIS
- Beam Diagnostics Development Team
- Also Into other things:
  - Posing for recruitment brochures
  - Whisky
  - Bikes
  - Board Games
  - Running
  - Travel





# M.Sc. Axi Holmström

Electronics Research Laboratory, University of Helsinki





# Chris Wilcox

## At Work

**2006-09: Bsc(Hons) Physics**

*University of Bath*

**2009-10: Space Weather Analyst**

*STFC Rutherford Appleton Laboratory (RAL)*

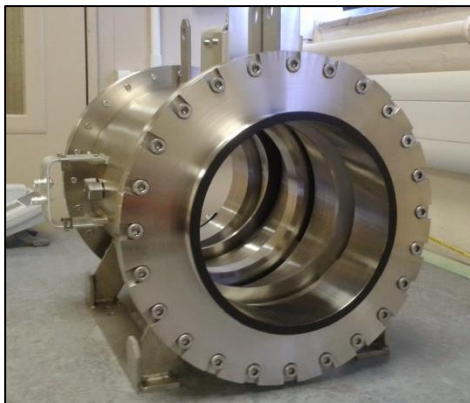
**2010-Present: Diagnostics Development Physicist**

*ISIS Neutron & Muon Source (also based at RAL)*

### Main areas of work:

Use of CST to design, study and build beam diagnostics:

- Split Plate BPMs,
- Wire Scanner Profile Monitors
- Ionisation Profile Monitors
- Beam Chopper
- Stripline Monitor Feedback System



Survivor of  
CAS 2012 (Granada) &  
CAS 2015 (Warsaw)



## Outside of Work

- Football, Running, Board Games...basically anything competitive!
- Nature
- Rock Music



- Junhao Wei
- Masoomeh Yarmohammadi Satri
- Daria Sergeeva
- Inaki Ortega
- Meghana M Patil
- Patricio Nadig



# Junhao Wei

Nationality: Chinese

Hometown: Lanxi, Zhejiang Province

University: University of Science and Technology of China

Institution: Deutsches Elektronen-Synchrotron (DESY)

Interest: Sports, Travel, Delicious food

PhD project: Beam diagnostics based on Higher Order Modes in  
SC cavities.

Masoomeh Yarmohammadi Satri



Ph.D. Degree in accelerator Physics (CERN/IPM)  
under supervision of Alessandra Lombardi  
on “Beam dynamics and commissioning of low and medium  
energy H- beam at Linac4”

Postdoc researcher (IPM):

- IPM-ELinac shielding design
- Preliminary simulation of ion beams for small inhomogeneities in air and water with FLUKA
- Penning ion source
- Design and manufacturing of the magnet of an H- PIG ion source



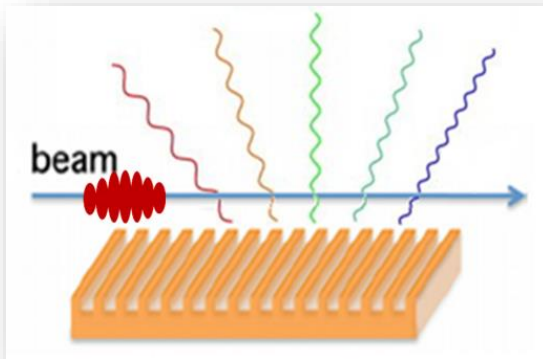
Moscow, Russia

# DARIA SERGEEVA

**PhD:** Coherent effects in polarization radiation from relativistic bunches  
(*about to be finished*)

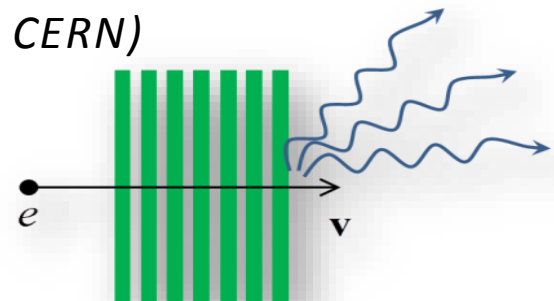
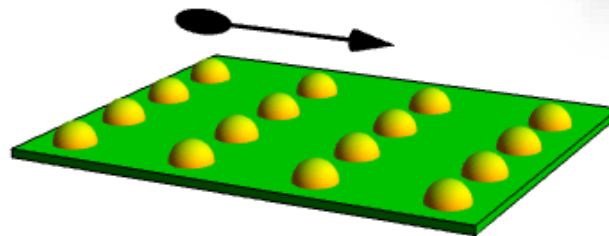
## Polarization radiation from bunches:

- Diffraction Radiation
- Smith-Purcell Radiation
- Cherenkov Radiation
- Transition Radiation
- Parametric X-ray Radiation



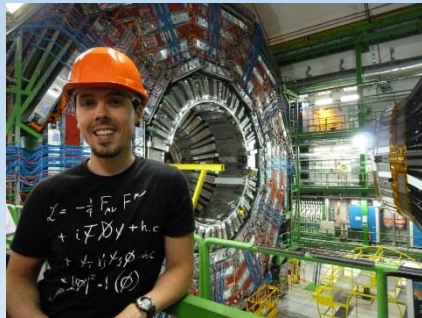
## Motivation:

- Developing schemes for non-invasive beam diagnostics
- Optimization of detectors based on Transition Radiation (*in collaboration with CERN*)



*One slide – one minute*

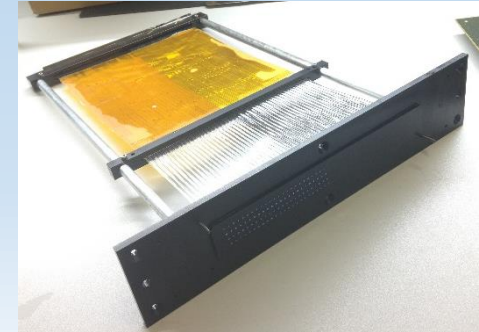
*Who am I? – Inaki Ortega, Physicist*



*Where do I work? – At CERN, in the Beam Instrumentation group*



*What's my current project? – Development of a beam monitor for secondary beams*



*What have I done in the past?*

*– Physicist in the CAST experiment at CERN*

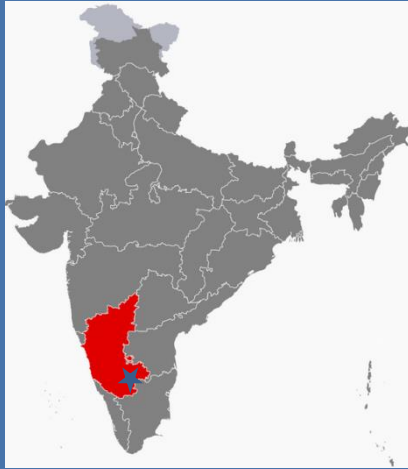


*– PhD with Ecole Polytechnique Federale de Lausanne (EPFL) and CERN. Subject of the thesis: accurate profile measurement of the low intensity secondary beams in the CERN Experimental areas.*



*What do I do after work? – Hiking, running, cycling, motorbike, reading, video games and parenting :-)*





*Born in 1992, Bangalore, India*

*Bachelor of Engineering in  
Electronics and Communication  
Double Masters in Sensor System  
Technology*

*(Vellore Institute of Technology,  
India & University of Applied  
Sciences, Karlsruhe)*

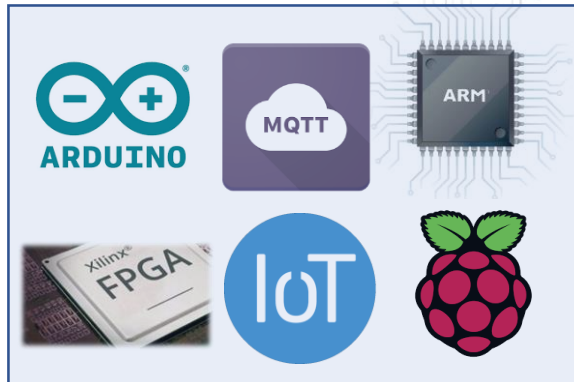
**Meghana M  
Patil**

*Currently a PhD student at  
Karlsruhe Institute of Technology  
Working on Sensor and Detector  
systems for high resolution and  
high repetition rate experiments  
at accelerator facilities*

*My hobbies include painting,  
playing badminton, travelling.....*



# Patricio Nadig, Electronics Engineer in Beam Diagnostics at ADAM



- Benedikt Würkner
- Alexandr Savchenko
- Sébastien LELOIR
- Ke Wang
- David Posthuma de Boer
- Ilja Bekmann

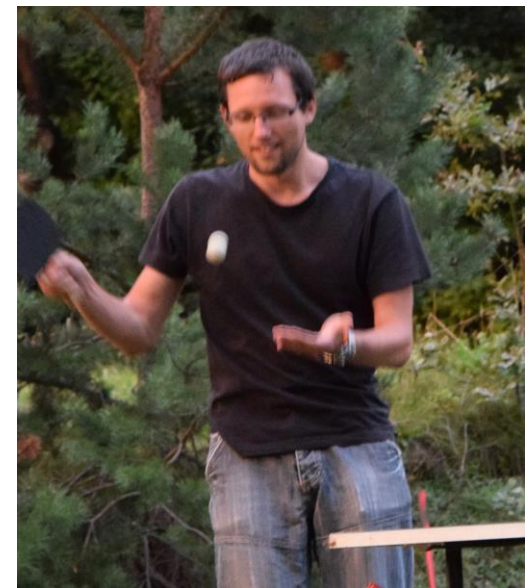


# Benedikt Würkner (Ben)

- I studied physics at the Vienna University of Technology
- I am currently in BE-BI-BL working on the BGV, a beam-profile monitor based on LHCb technology
- I like table tennis, volleyball and late night conversations about basically everything
- If you wanna know more just ask :)



**NO KANGAROOS  
IN AUSTRIA**







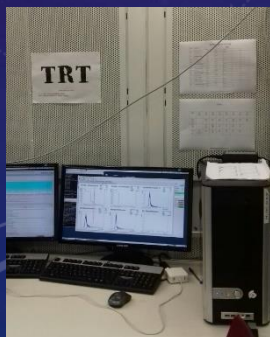
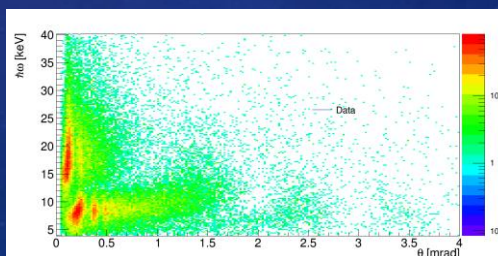
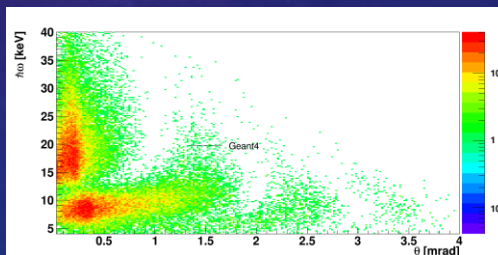
PhD student of National Research  
Nuclear University MEPhI since 2015;  
Collaboration with ATLAS TRT group  
since 2016;



**Hobby**

My area of interest: X-rays,  
Transition radiation, Cherenkov  
radiation, charged particle  
interaction with a matter, particle  
detectors, Geant4 simulations

**ALEKSANDR  
SAVCHENKO**

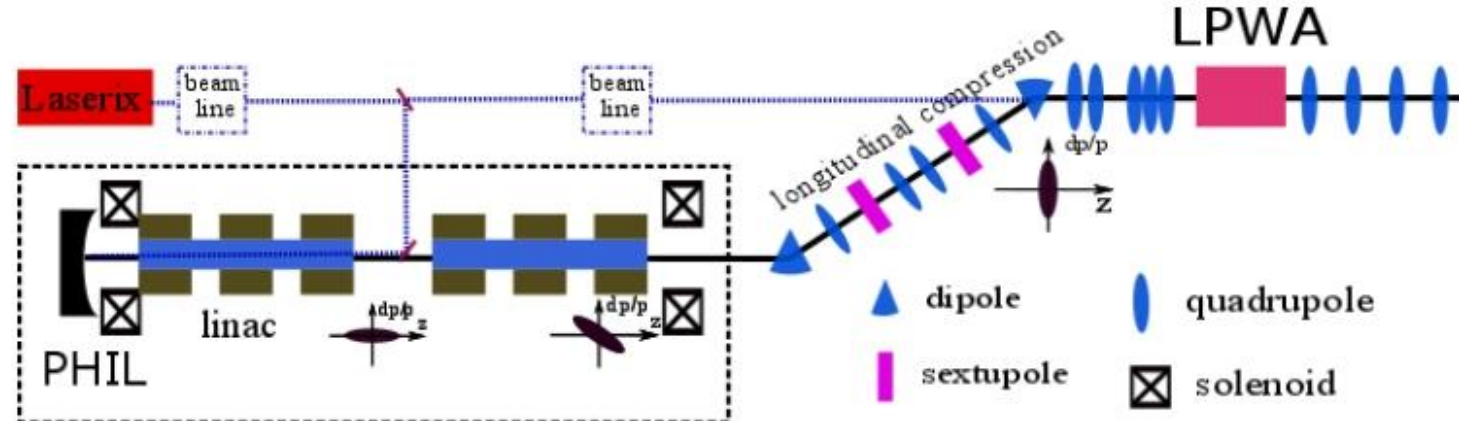




# Ke WANG

PhD at Laboratoire de l'Accélérateur Linéaire (LAL), France

**Subject: Laser plasma wakefield acceleration of an external e- beam**



**What I want to learn here**

Beam diagnostic, i.e. emittance, bunch length, longitudinal profile.

MANCHESTER  
1824

The University of Manchester

# MPhys Physics



Science & Technology  
Facilities Council

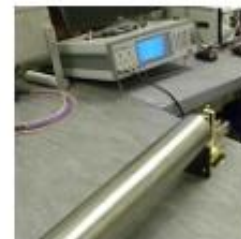
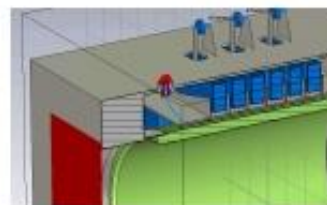


ISIS

## Beam Diagnostics



## Coupling Impedances



# Ilja Bekman: Diagnostics at COSY

## COoler SYnchrotron

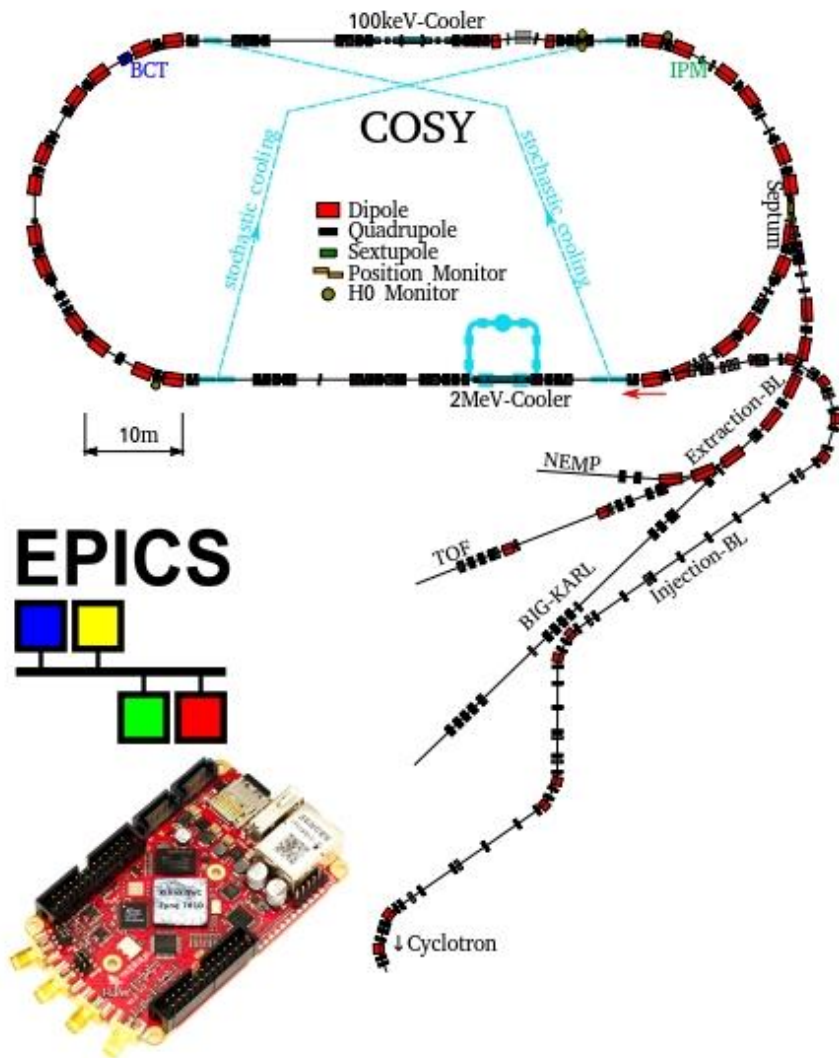
- (pol-zed)  $p^+$  and  $d^+$  up to 3.65 GeV/c
- 3x beam cooling
- Electric Dipole Moment precursor

## Diagnostics of Beam ...

- Position, Losses, Profile, Current.
- Injection/Extraction: Harps, MWPCs, ...

## Happy to (also) talk/learn about ...

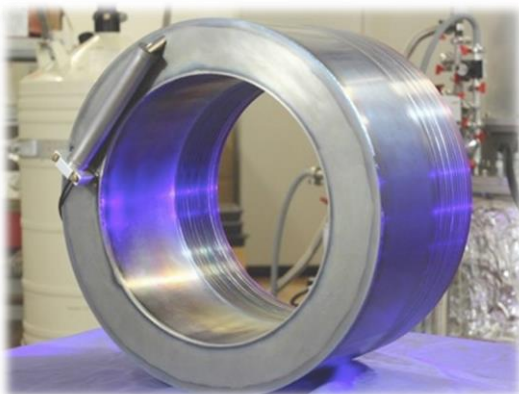
- FPGAs, Zynq, AXI4, Red Pitaya,
  - EPICS, Control Systems, Beckhoff EtherCAT,
  - Linux, Git, GNU make
- 
- ... as well as 3D-printing



- David Haider
- Jan Roever
- Min Li
- Marcus Palm
- Elena Donegani
- Askar Issatov



# David Haider – PhD student



Accelerators Validating Antimatter – EU Marie-Curie Action

# Jan Roever

Mechanical-system engineer, DESY

## DSEY

experimental station (P11) - installation and some user support  
(FS-PE 2010-2014)

Beamline installation of the XFEL collimation section  
(MVS 2014-2016)

installation and some mech. design of the longitudinal  
diagnostics at XFEL and FLASH  
(MSK 2016-now)



Live in Hamburg –  
Germany  
two sons 7 and 3  
years  
previous live:  
cabinet maker  
study Mechanical  
Mechatronics  
Engineering

XFEL: vacuum chamber installation

## Measuring Longitudinal Electron Bunch Properties

BAM

Electro-Optical Method,  
In Time Domain

Optical Sampling of a picked-up RF  
Voltage signal with 40GHz bandwidth.  
**Measurement of the Arrival Time.**  
(relative to an optical time reference)

EOD

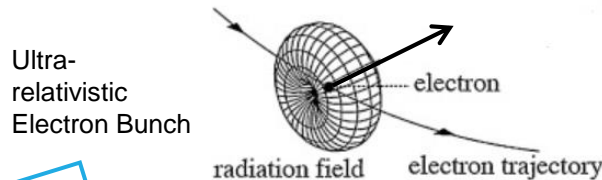
Electro-Optical Method,  
Spectral Decoding

Encoding of the electric field  
density onto an optical Spectrum.  
**Measurement of the  
Longitudinal Profile.**

BCM

Electrical THz Field Detection  
and Direct Sampling

Forcing the Electron Bunch to emit coherent  
THz radiation. Its frequency and intensity  
varies with the bunch length.  
**Measurement of the Compression Rate.**

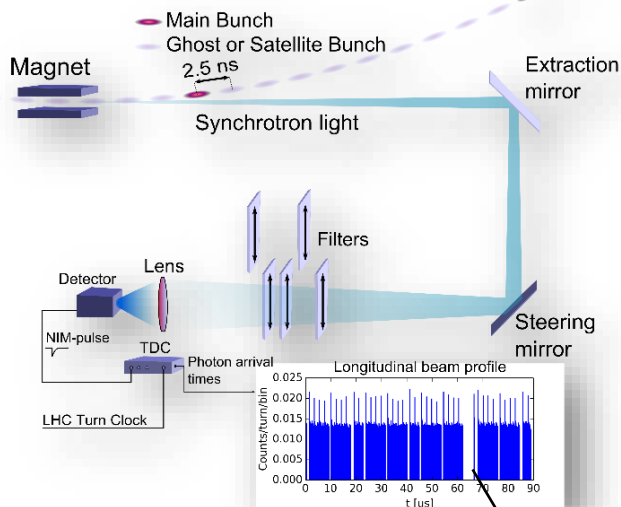


# Min Li (IMP, CAS)

Email: [limin@impcas.ac.cn](mailto:limin@impcas.ac.cn)

- work in the institute of Modern Physics(IMP), Chinese Academy of Sciences(CAS)
- Graduated and got the Doctor Degree from the University of Chinese Academy of Sciences in July 2015
- 2009.07-2010.11: Worked in ZTE cooperation as a software engineer
- 2010.11-until now: work in the beam diagnostics(BD) department of IMP, in charge of the design and implement of the BD front-end control system for Heavy Ion Medical Machine(HIMM) , the upgrade of the BD control system HIRFL and some other projects.

## BSRL: Beam Synchrotron Radiation - Longitudinal

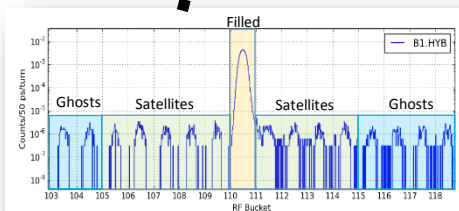


Temporal profiles of LHC beams

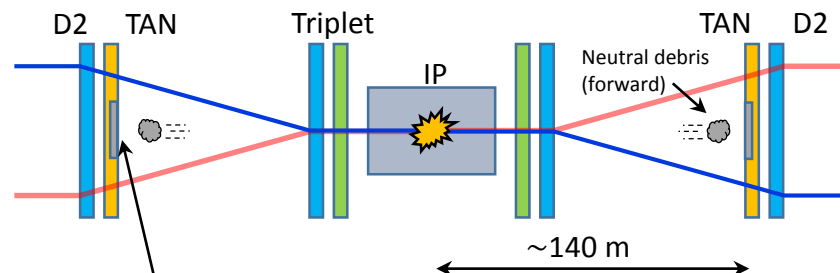
Complement to FBCT and DCCT: measure charge in nominally empty RF-buckets

Dynamic range: 5 orders of magnitude

Example use cases: Luminosity calibration, assess LHC injection quality



## BRAN: Beam Rate of Neutrals



BRAN: Left of IP 1



Machine luminosity monitors

Ionization chambers (IC) / Cherenkov light monitors

Challenges: large dynamic range, radiation, space constraints

Example use cases: Finding collisions, OP backup for experiment luminosity

M. Palm, BE-BI-PM



# ELENA (Extra Low ENergy Antiproton)



## Post-doc in the Beam Diagnostic Section at ESS

- Contribute to deployment and commissioning of several diagnostic systems
- Simulate, analyze and test materials, detectors and electronics that will be exposed to radiation



**PhD - Hamburg**  
CERN RD50  
HL-LHC / CMS  
Radiation-hard  
Silicon sensors



**BSc + Msc - Como**  
BNCT radiotherapy  
nTOF detectors  
Medical linac  
MCNPX simulations



PAUL SCHERRER INSTITUT



**Internship - Villigen**  
MCNPX simulations  
MEGAPIE target  
Radiation damage  
calculations





# BEAM INSTRUMENTATION



- Askar Issatov
- Engineer of Flerov Laboratory of nuclear reactions of Joint institute for nuclear research
- Master of physics
- Creation and development of detectors for heavy ion beam diagnostics (intensity, beam profile, energy) for FLNR accelerator complex
- Work experience with scintillation and semiconductor detectors, ionization chambers and MCP.

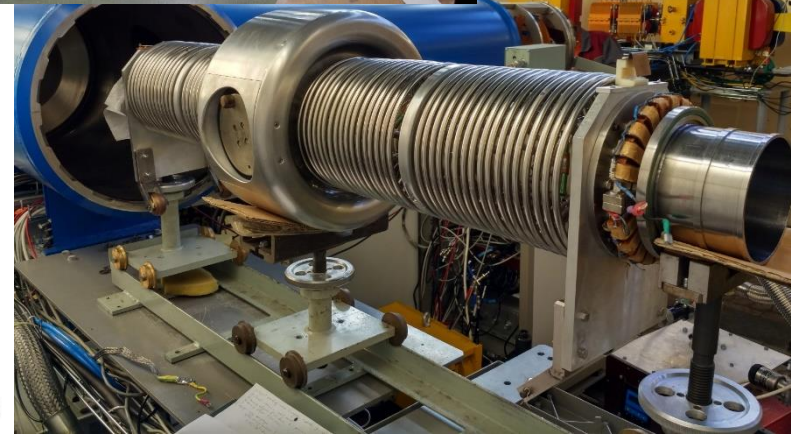
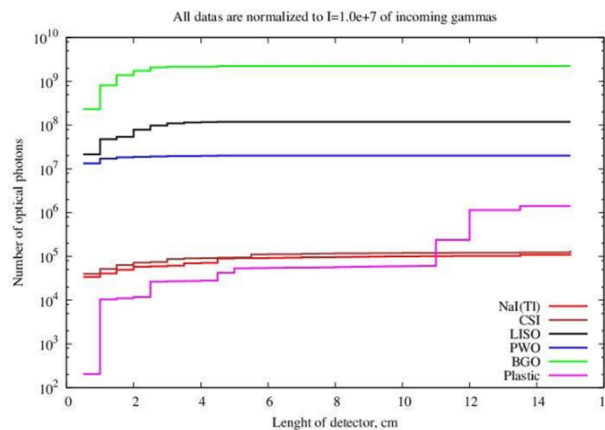
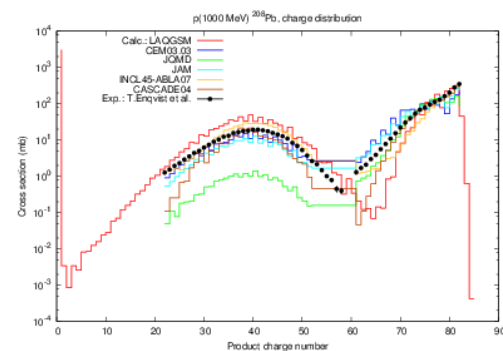
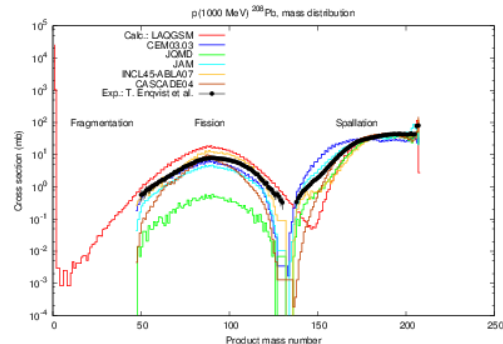
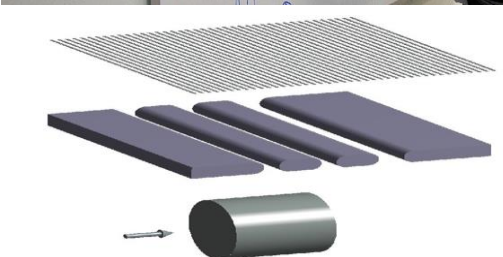
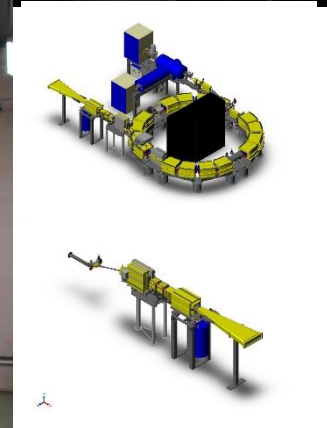
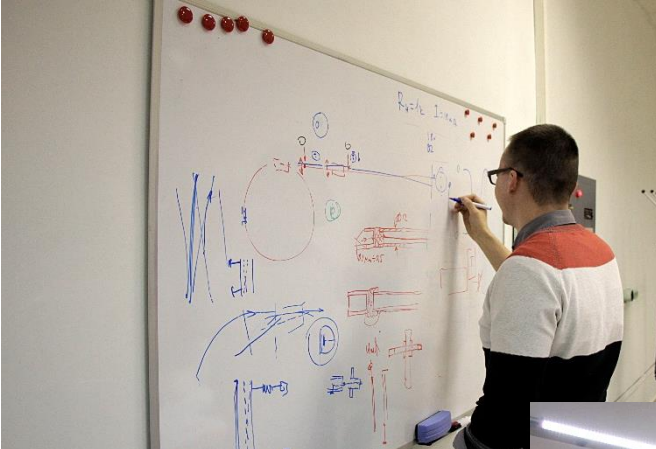
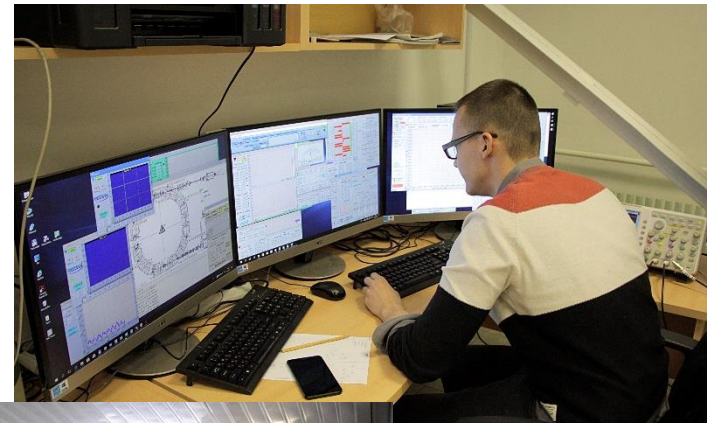
2-15 June, Tuusula, Finland

- Alexander Pryanichnikov
- Anatolii Kalamaiko
- Nouredine Elkamchi
- Ronald Joseph
- William Frank



Alexander Pryanichnikov

PhTC LPI RAS  
Protvino, Russia







Since 2012	Research Engineer	: <i>Electronics &amp; Particle Accelerator Instrumentation</i>
2012	PhD	: <i>Micro &amp; Nano Technologies</i>
2008	Master	: <i>Microelectronic &amp; Microwave</i>

## JOB FIELD

*Machine Interlock system (Based on PLC)*

*RF and mixed signal electronics*

*Synchronization and timing systems*

*Feedback electronics*

## ACCELERATOR FACILITIES

**ThomX** : *Compact X-rays source based on Compton effect → Medical applications*

**PHIL** : *5 Mev electron photoinjector → R&D for acceleration technologies*

**PRAE** : *140 Mev electron source → R&D and medical applications*

# Ronald Joseph- GSI Darmstadt



**PhD- Kumamoto University, Japan (Telecommunication- Microstrip Antenna Design)**

**Past – Fraunhofer FHR, Bonn (2012-2014)**

**Lecturer, Christ University, Bangalore, India (2002-2007)**

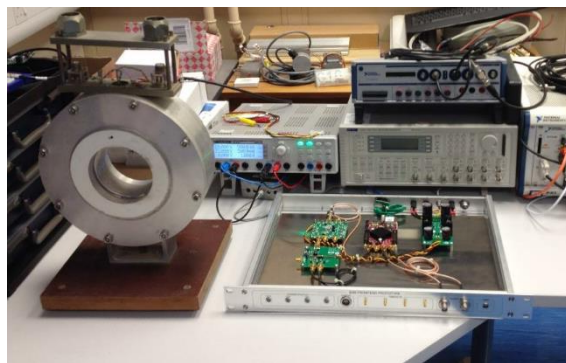
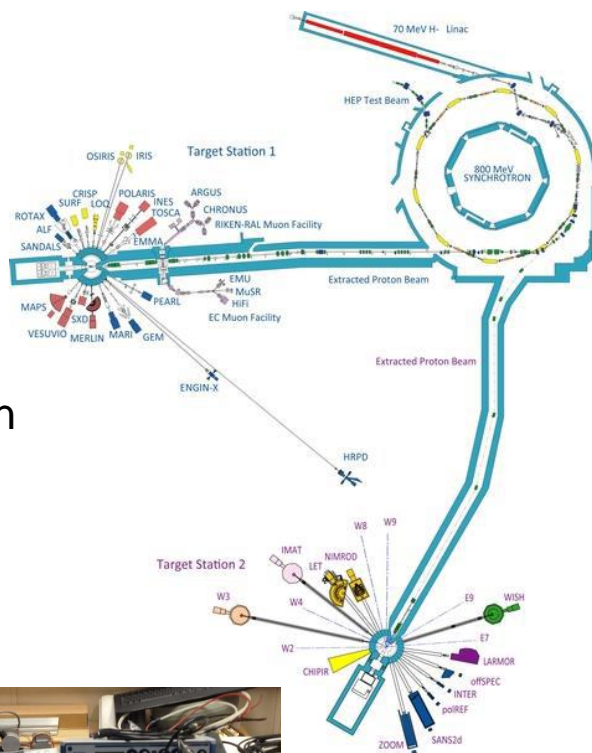
**Hobbies- Badminton, Reading**



# Will Frank

Electronic Engineer  
Diagnostics Development Section  
ISIS Neutron & Muon Source

- 2016 – Present
- Ionisation Profile Monitors
- Intensity Monitors
- Tune Measurement



## In my spare time:

- Hiking
- Climbing
- Running
- Gardening



Lecturers & CAS team

- Markus Aicheler (Helsinki Institute of Physics (HIP))
- Kay Wittenburg (DESY)
- Beata Walasek-Hoehne (GSI)
- Jeroen Belleman (CERN)
- Manfred Wendt (CERN)
- Allan Gillespie (University of Dundee)
- Marek Gasior (CERN)
- Andreas Peters (Heidelberg Ion Therapy Center (HIT))
- Enrico Bravin (CERN)
- Rhodri Jones (CERN)
- Hermann Schmickler (CERN)

## NAME:

Markus AICHELER

## AFFILIATION:

Helsinki Institute of Physics/CERN

## WHAT AM I SUPPOSED TO DO:

HIP: Project leader "Accelerator Technology Project"

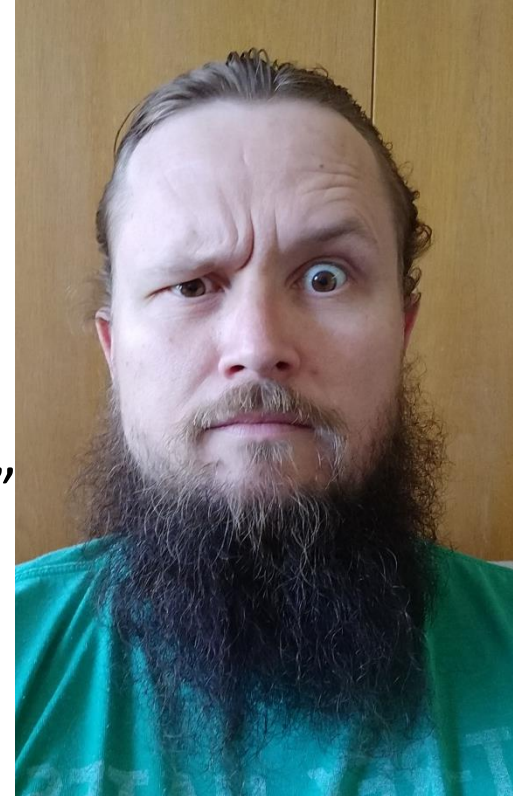
CERN: Technical development for CLIC module

## WHAT AM I SUPPOSED TO DO HERE AT CAS:

- Part of the local organizer committee
- Assisting with hands on courses
- Nanny

## WHAT I LIKE:

- Everything raw (food, music, culture, people,...)
- Experimenting with new stuff
- Nature & Technology
- Mechanics in general (it is way cooler than electronics)



**Kay Wittenburg: Career**

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



**Private**



**Hobbies**





# Beata Walasek-Höhne

GSI Helmholtz Center for Heavy Ion Research

Department: Beam Instrumentation and Diagnostics

Fields of work:

- instrumentation for high energy beam transport lines
- optical profile measurement: scintillating screens, beam induced fluorescence (BIF) and ionisation profile monitor (IPM)



# Jeroen Belleman



Jeroen came to CERN in 1981 to work on data acquisition equipment, mainly for the UA1 and UA2 experiments that were in full swing at the time. Those were the days of CAMAC and NIM electronics. Later, Fast-Bus and VME, used in LEP experiments, were added to that.

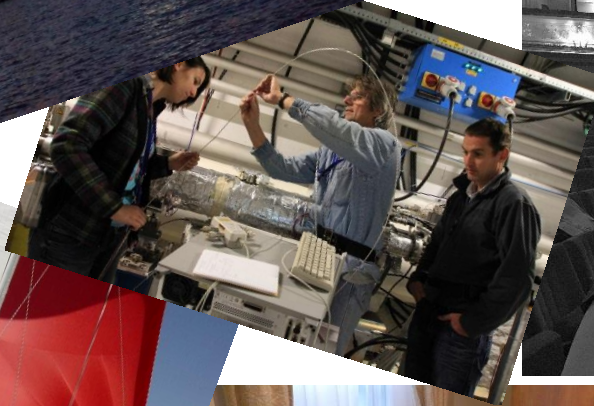
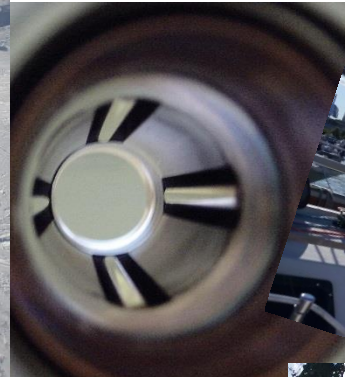
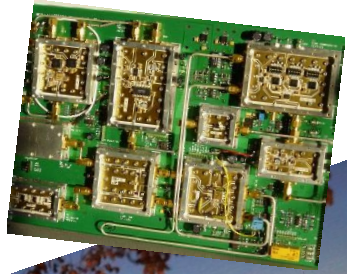
In 1991 he switched to beam instrumentation in the CERN PS division, at first to work on the existing beam trajectory measurement system and on a new wall current monitor for the Proton Synchrotron. He has by now completely renovated the trajectory measurement systems of the PS and Booster synchrotrons and installed several more wall current monitors and wide-band pick-ups.

When he's not doing beam instrumentation, he enjoys mountain hiking and ballroom and Argentine tango dancing.





# MANFRED in a



## Allan Gillespie, University of Dundee



I am now Emeritus Professor of Photonics at the University of Dundee, having retired in 2014. I still keep in close contact with the MAPS group at Dundee, which specialises in laser applications to particle accelerators, in addition to a wide range of laser physics and engineering based on surface interactions.

I am therefore probably your oldest lecturer, so in keeping with tradition I attach a mug-shot which is at least 5 years old in the hope that you will not recognise me.

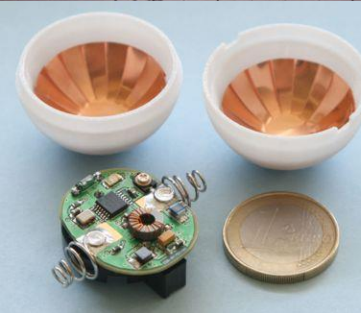
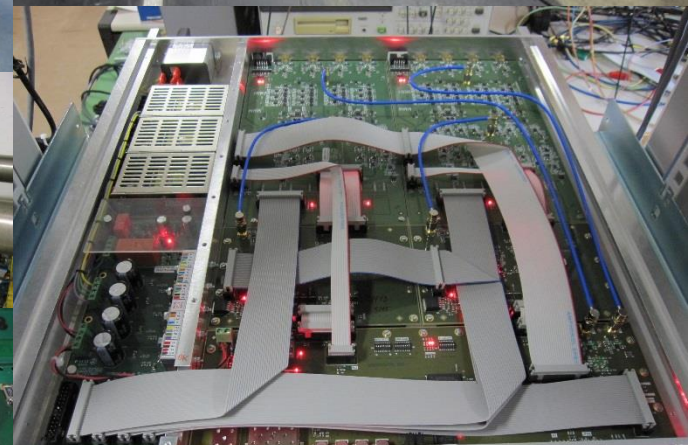
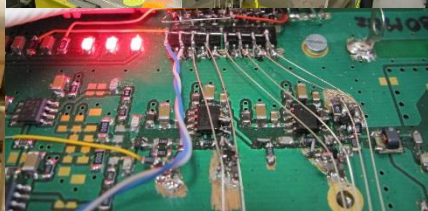
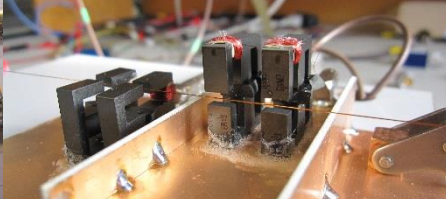
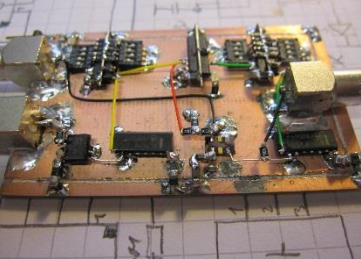
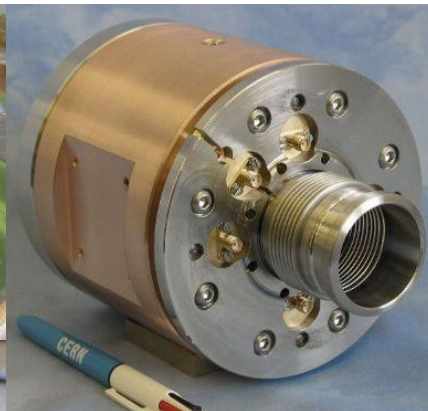
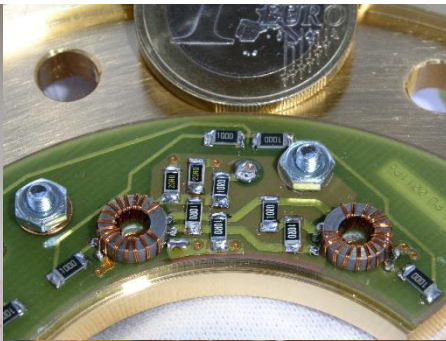
My career has spanned nuclear and accelerator physics, conventional optics, *free-electron lasers* and advanced laser applications for accelerators. I was one of the UK pioneers in free-electron lasers (in 1982) and have been involved with many international projects since then, including at DESY, SLAC, FELIX, J-Lab and CERN.

Since 2011 my group, along with collaborators at STFC Daresbury Laboratory in the UK, has been part of the UK CLIC collaboration at CERN, working on electro-optic techniques to measure the detailed 150fs electron bunch profile of the CLIC main beam. More recently, we have developed a novel laser surface treatment technique (LESS) to mitigate *electron cloud effects* in the LHC at CERN. Tests so far have been extremely encouraging, and may lead to adoption by CERN.



# Marek Gasior

- 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](http://www.cern.ch/gasior/pro)







Andreas Peters  
Physicist  
born 1961  
Germany

Short CV:

University:

10/1981 – 08/1988, University Bonn, Germany  
Diploma in Physics/Astronomy

Employments:

11/1986 – 07/1988, Working Student at the  
Agricultural Institute and the Institute of Physics

11/1988 – 12/1988, Temporary worker at IKEA,  
Wallau, Germany

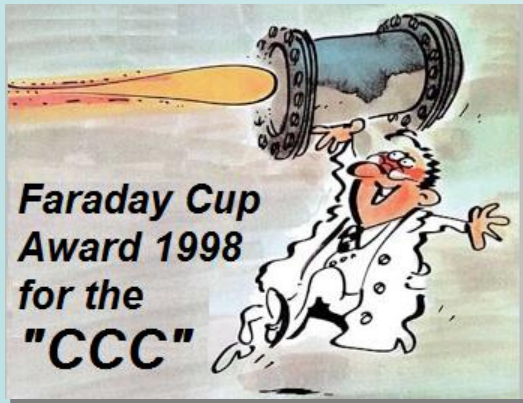
01/1989 – 12/2006, Scientist, GSI, Darmstadt,  
Germany:

till 08/1993 member of the operating group,  
since 09/1993 deputy group leader beam  
diagnostics,

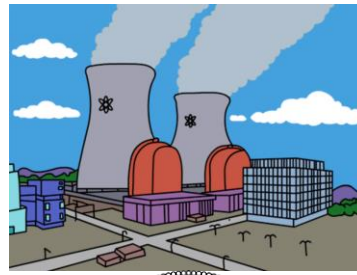
since 02/2001 group leader beam diagnostics

since 01/2007, Head of the Accelerator Group at  
the Heidelberg IonTherapy Centre (HIT), see

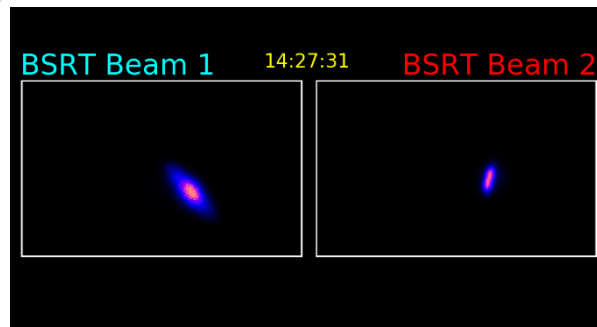
[www.hit-centrum.de](http://www.hit-centrum.de)



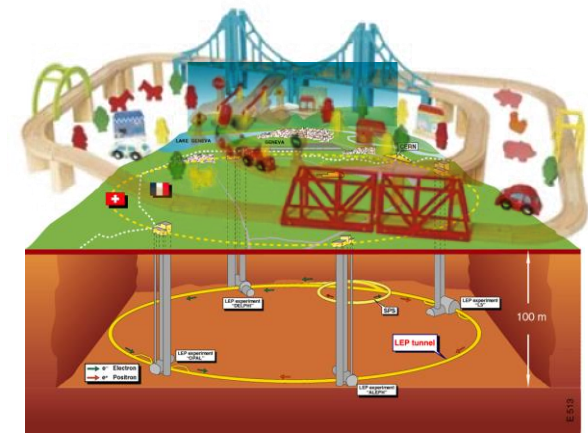
# Enrico Bravin CERN



- Particle-matter interaction
- OTR
- Synchrotron radiation
- Optics
- Electronics
- Simulations
- Data analysis
- Transverse dynamics



2018 – CERN BE-BI  
Guessing what the  
emittances in LHC are

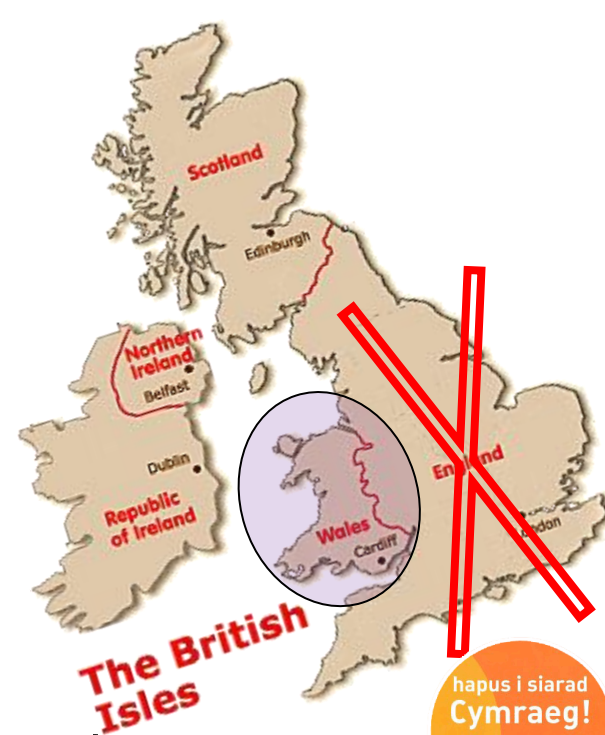


1996 – CERN SL-BI  
Finding out why train timetables  
affected LEP

PSB CPS AD  
CTF  
LEIR HIE-  
ISOLDE  
SPS

In-between– CERN xxx-BI  
Measuring transverse profiles in all  
kinds of accelerators using all kinds  
of methods







*All is in the delicate balance of life*



## LHC-HiLumi Project

Hermann Schmickler  
**60+** years old  
Former head of CERN  
beam instrumentation  
and controls  
CLIC technical director



HiFi

Live Sound

CLIC-CDR

Since January 2018 director of CAS

Chromaticity  
Measurement using  
head-tail motion

