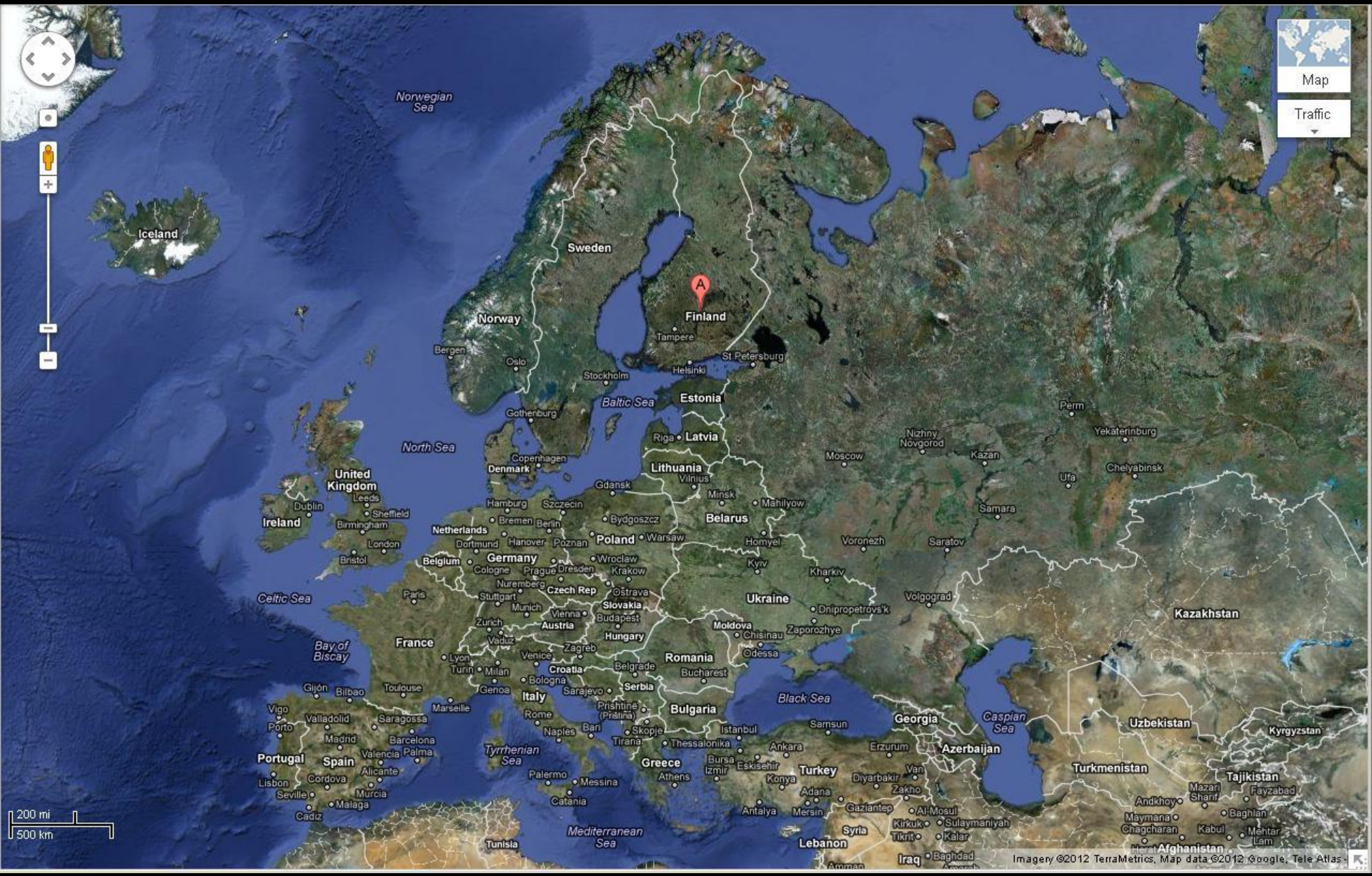
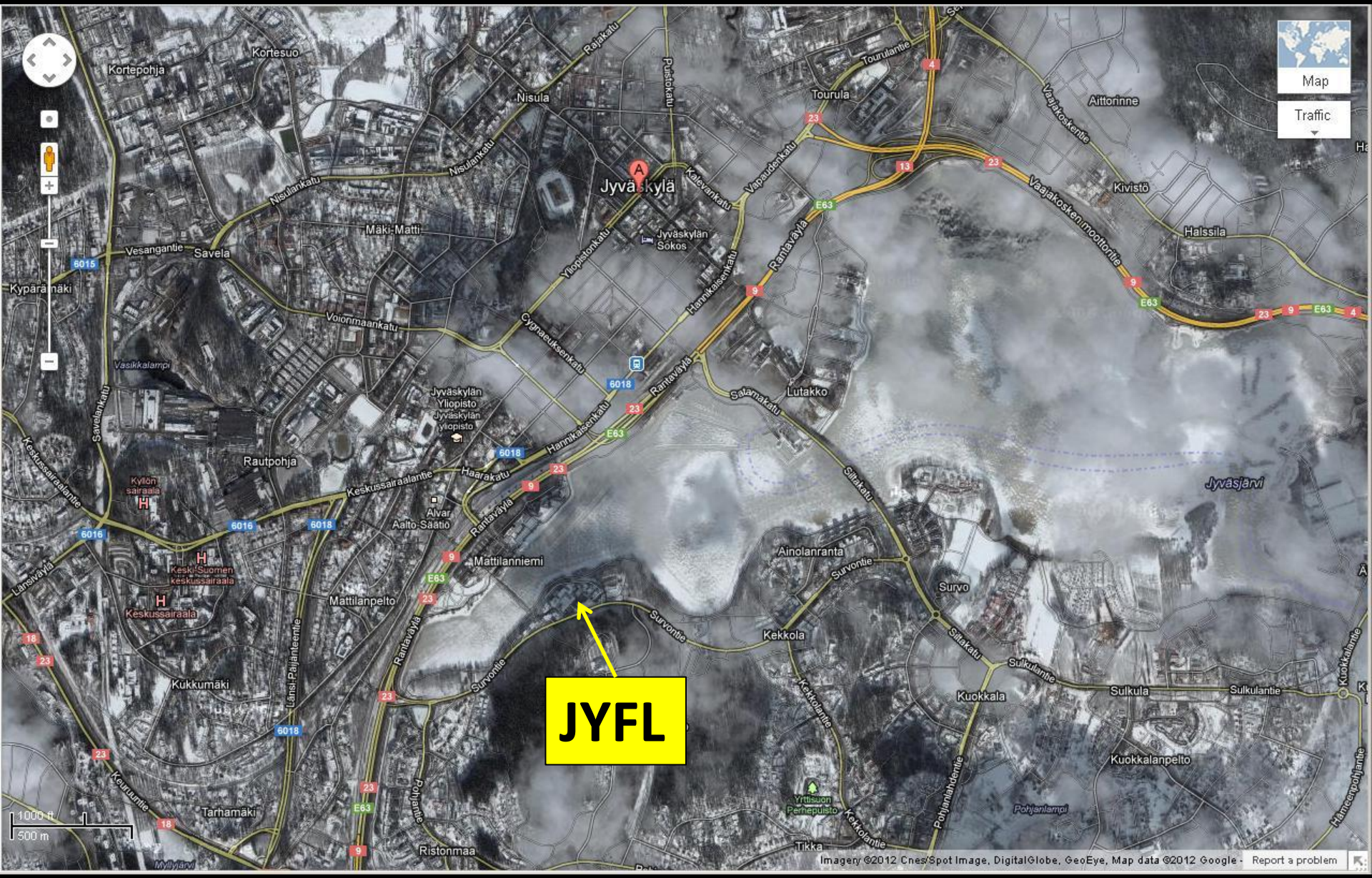
Status of the Jyväskylä Accelerator Laboratory

Pauli Heikkinen

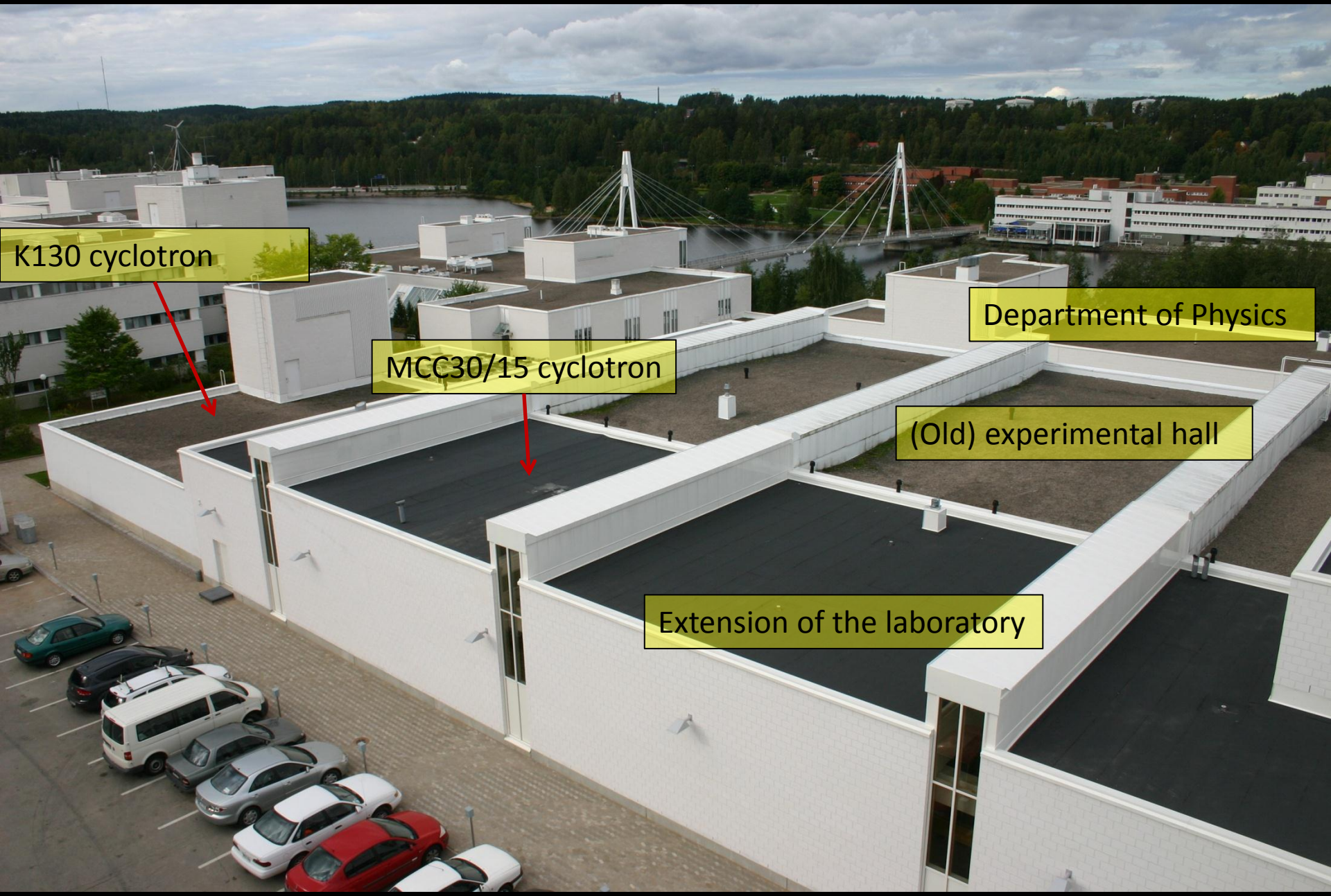
JYFL

ECPM 2012, PSI, Villigen

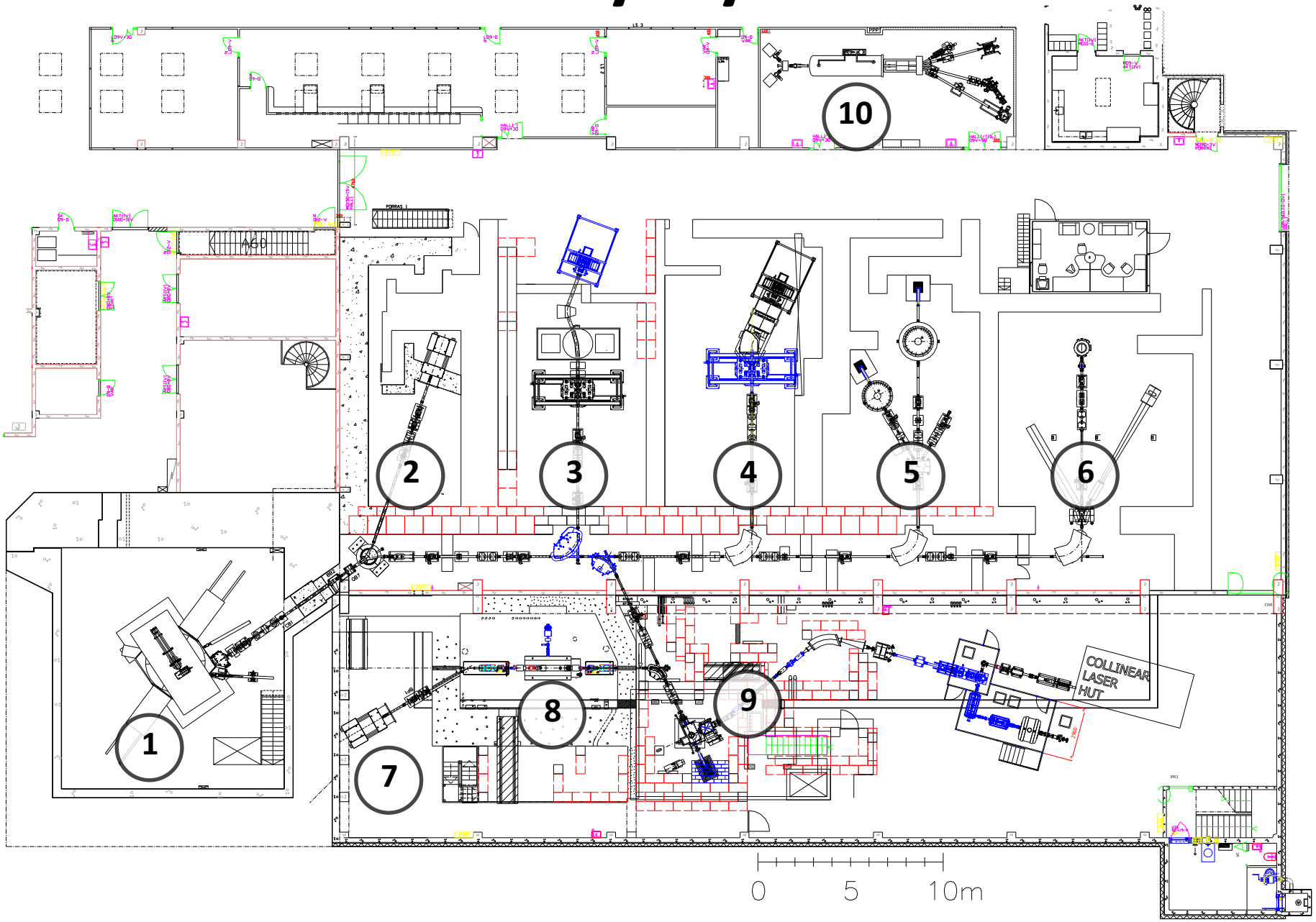

Map
Traffic
Norwegian Sea
Iceland
Sweden
Finland
A
Norway
Tampere
Bergen
Oslo
St Petersburg
Helsinki
Stockholm
Baltic Sea
Estonia
Gothenburg
Riga
Latvia
North Sea
Copenhagen
Denmark
Lithuania
Vilnius
Gdansk
Minsk
Mahilyow
Belarus
United Kingdom
Leeds
Dublin
Sheffield
Ireland
Birmingham
Hamburg
Szczecin
Bremen
Berlin
Bydgoszcz
Netherlands
London
Dortmund
Hanover
Poznan
Poland
Warsaw
Homyel
Bristol
Belgium
Germany
Cologne
Prague
Dresden
Wroclaw
Kyiv
Nuremberg
Krakow
Czech Rep
Ostrava
Celtic Sea
Paris
Stuttgart
Munich
Slovakia
Ukraine
Vienna
Budapest
Zurich
Austria
Moldova
Chisinau
Zaporozhye
Bay of Biscay
France
Vaduz
Hungary
Zagreb
Lyon
Venice
Odessa
Romania
Turin
Milan
Croatia
Belgrade
Bucharest
Bologna
Gijón
Bilbao
Toulouse
Genoa
Serbia
Italy
Sarajevo
Marseille
Prishtinë (Priština)
Bulgaria
Vigo
Valladolid
Saragossa
Rome
Black Sea
Porto
Naples
Bari
Skopje
Tirana
Thessalonika
Istanbul
Samsun
Madrid
Barcelona
Tyrrhenian Sea
Valencia
Palma
Portugal
Spain
Alicante
Greece
Athens
Bursa
Izmir
Eskisehir
Ankara
Erzurum
Turkey
Konya
Lisbon
Cordova
Palermo
Messina
Seville
Murcia
Catania
Malaga
Cadiz
Adana
Diyarbakir
Van
Zakho
Antalya
Mersin
Gaziantep
Al-Mosul
Kirkuk
Sulaymaniyah
Syria
Tikrit
Kalar
Mediterranean Sea
Tunisia
Lebanon
Iraq
Baghdad
Amman
Moscow
Nizhny Novgorod
Kazan
Perm
Yekaterinburg
Ufa
Chelyabinsk
Samara
Saratov
Voronezh
Kharkiv
Volgograd
Dnipropetrovs'k
Kazakhstan
Georgia
Caspian Sea
Azerbaijan
Uzbekistan
Kyrgyzstan
Turkmenistan
Tajikistan
Mazari Sharif
Fayzabad
Andkhoy
Baghlan
Maymana
Chagcharan
Kabul
Mehtar Lam
Herat
Afghanistan
200 mi
500 km
Imagery ©2012 TerraMetrics, Map data ©2012 Google, Tele Atlas

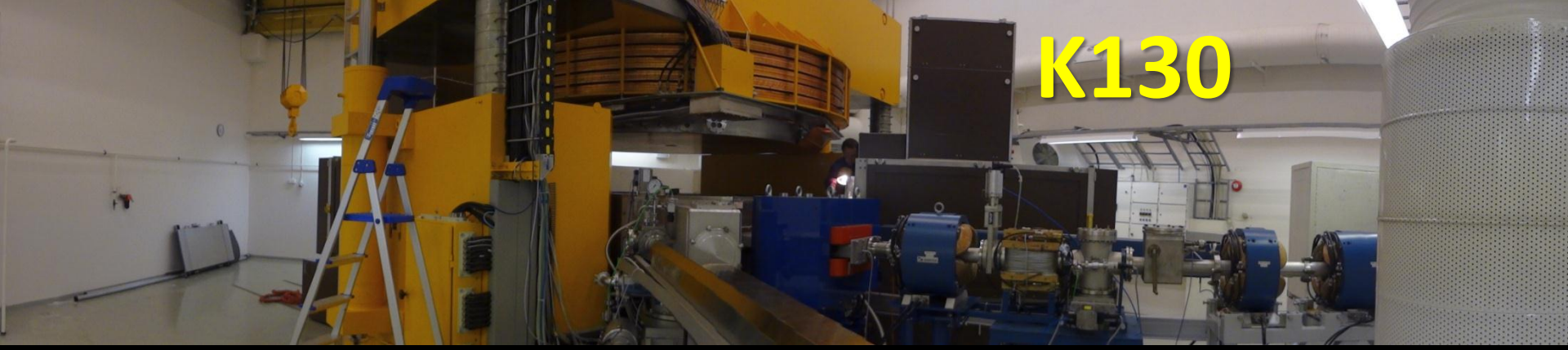

JYFL
Jyväskylä
Jyväskylän Sokos
Jyväskylän Yliopisto
Jyväskylän yliopisto
Kortepohja
Kortesuo
Nisula
Tourula
Aittorinne
Kivistö
Halssila
Mäki-Matti
Vesangantie
Savela
Kypärämäki
Vasikkalampi
Rautpohja
Kylän sairaala
Keskussairaala
Keskussairaalantie
Alvar Aalto-Säätiö
Mattilanniemi
Mattilanpelto
Kukkumäki
Tarhamäki
Ristonmaa
Lutakko
Ainolanranta
Survo
Kekkola
Kuokkala
Sulkula
Kuokkalanpelto
Tikka
Jyväsjärvi
Pohjanlampi
Yrttisuon Perhepuisto
Rantaväylä
Vaajakoskentie
Vaajakoskenmoottoritie
Tourulantie
Punkkalantie
Rajakatu
Nisulankatu
Kalevankatu
Vapaudenkatu
Yliopistonkatu
Hannikaisenkatu
Cygnaeuksenkatu
Voionmaankatu
Haarakatu
Salamakatu
Siltakatu
Survontie
Sulkulantie
Kuokkalantie
Kekkolantie
Pohjanlahdentie
Hämeenpohjantie
Savelankatu
Länsi-Pajajantie
Länsiväylä
Keuruuntie
Myllyjärvi
Map
Traffic
1000 ft
500 m
Imagery ©2012 Cnes/Spot Image, DigitalGlobe, GeoEye, Map data ©2012 Google
Report a problem

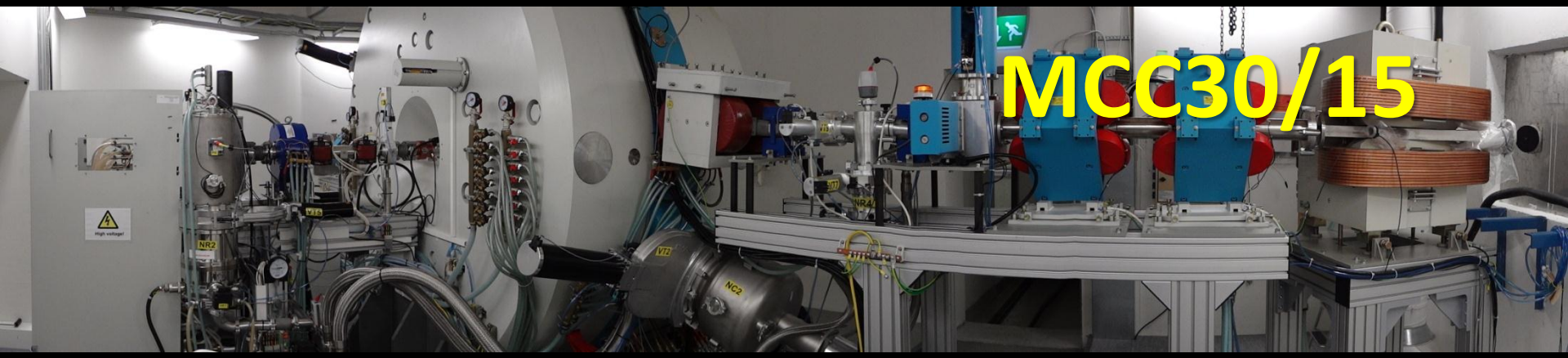
TIF KANOSTOT
Nanoscience Center
© 2012 Google
Report a problem
Image Date: August 2009


K130 cyclotron
MCC30/15 cyclotron
Department of Physics
(Old) experimental hall
Extension of the laboratory

Laboratory lay-out

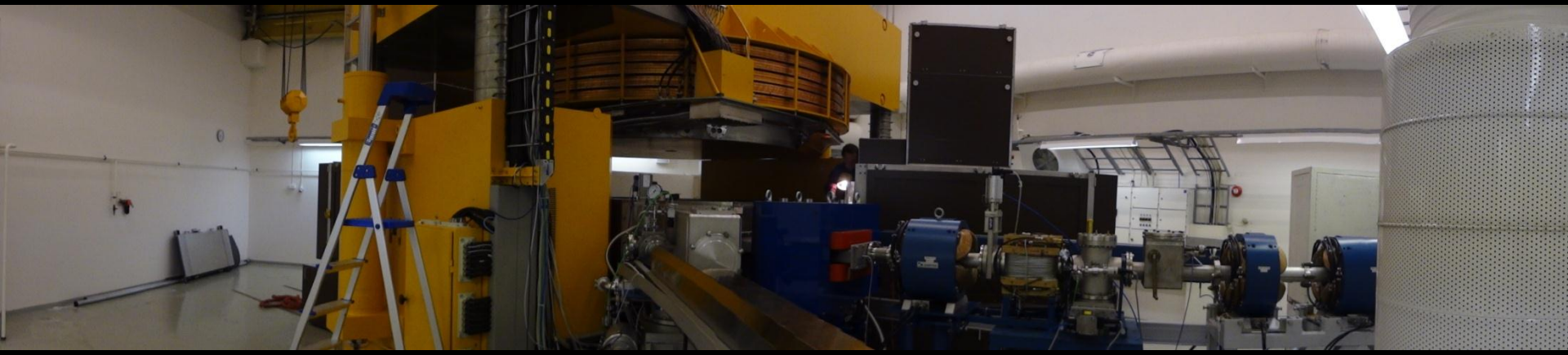



K130

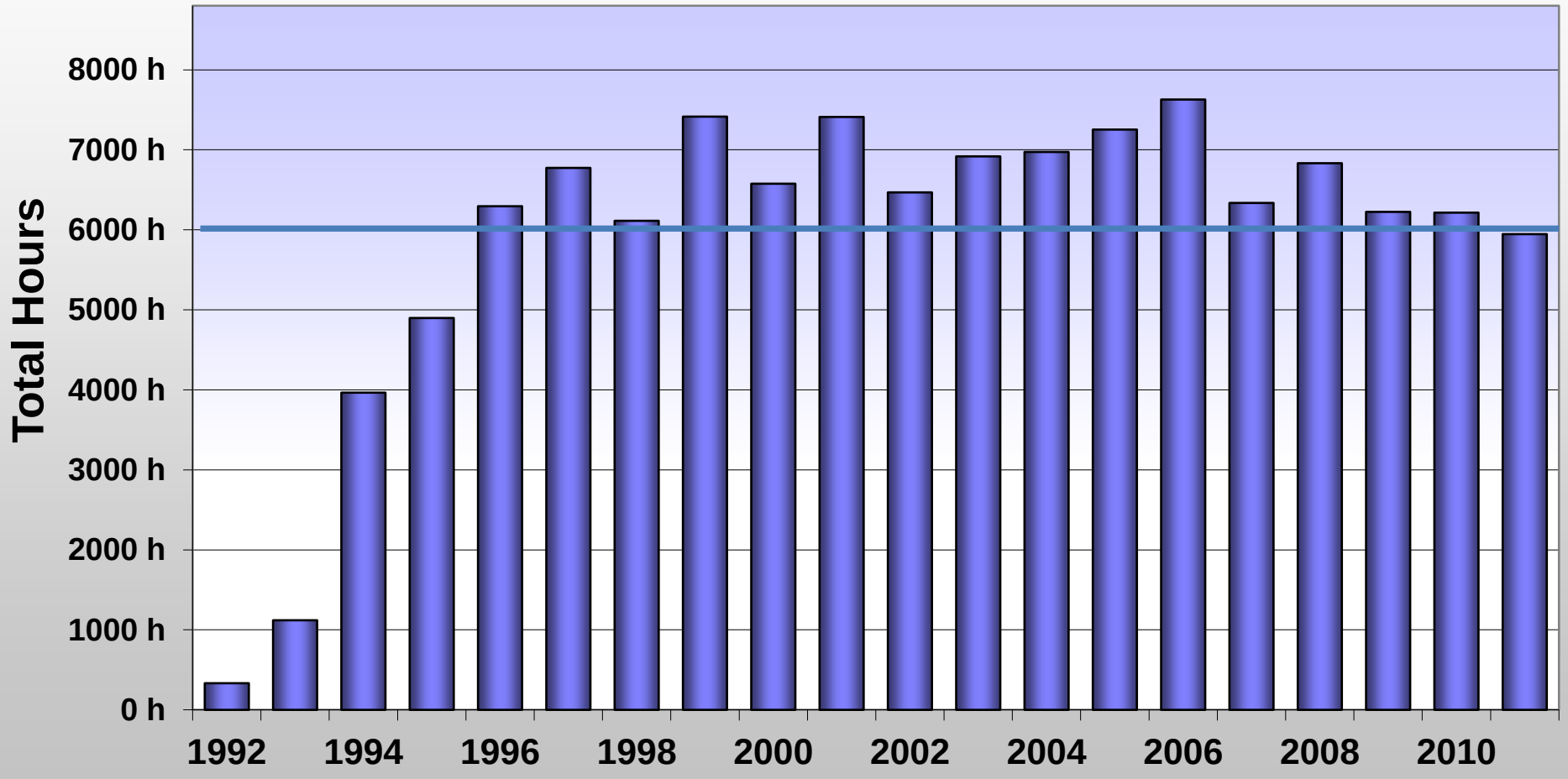

MCC30/15

Pelletron
(1.7 MV)

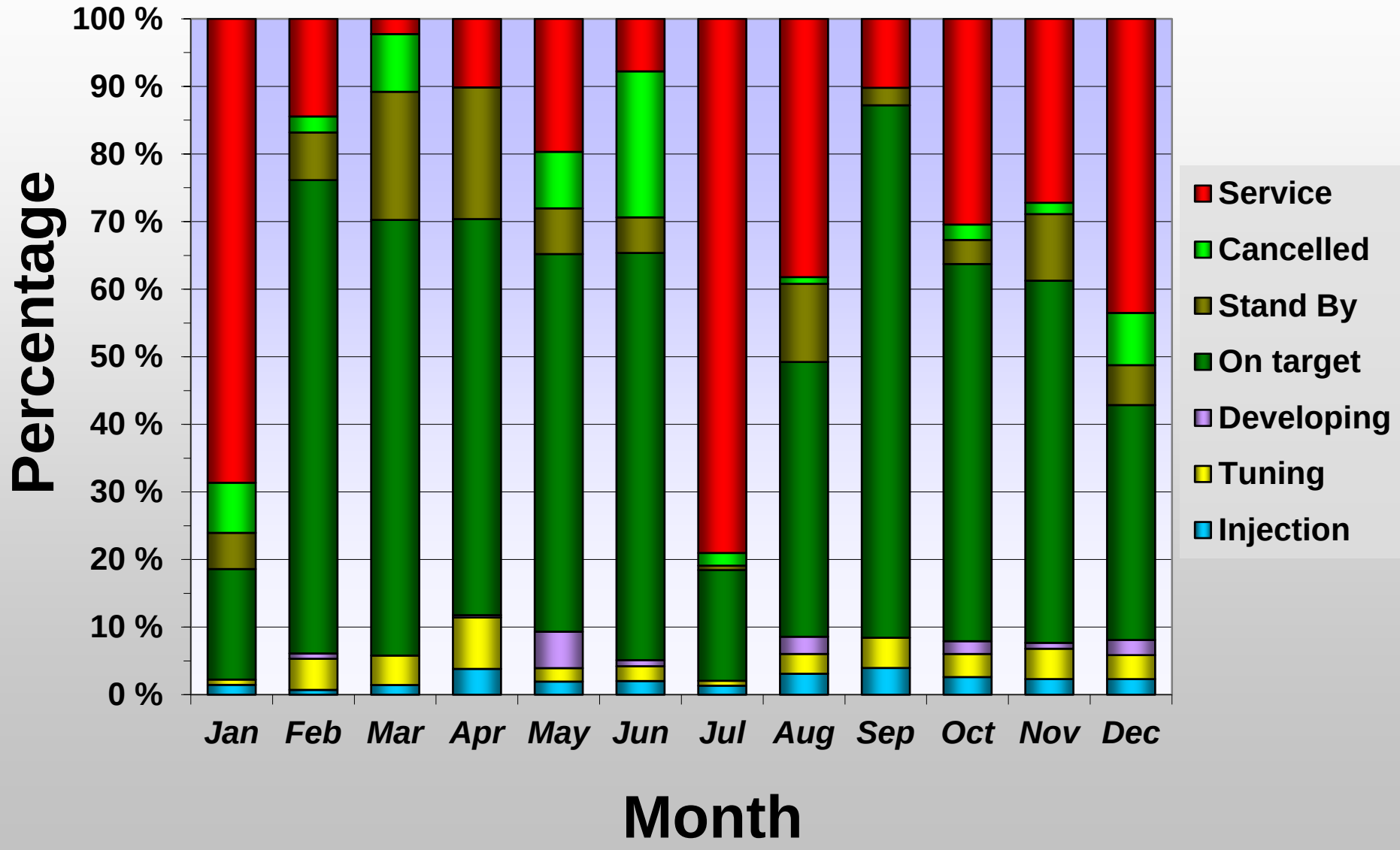
K130



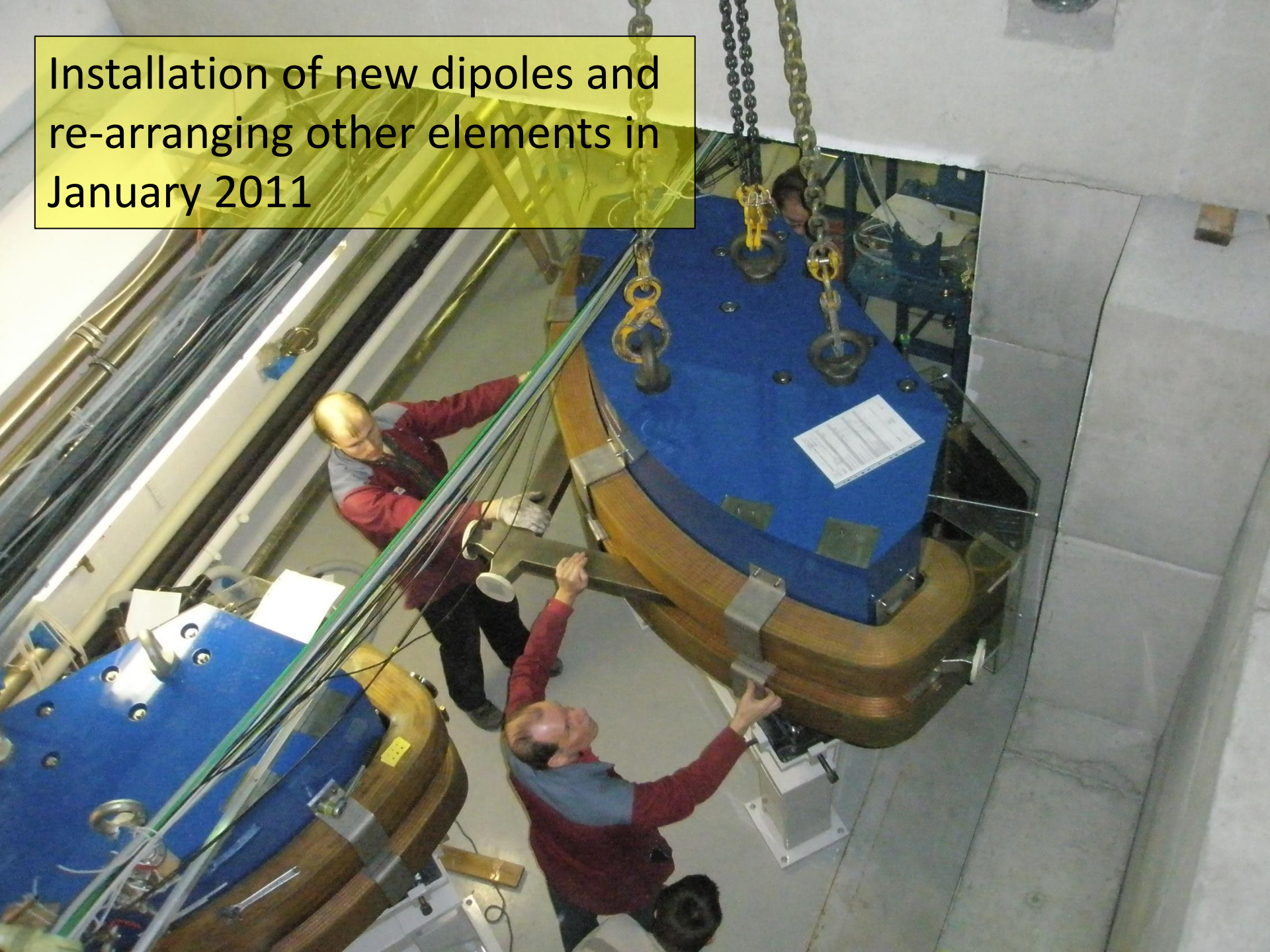
Operation of the Jyväskylä K130 Cyclotron



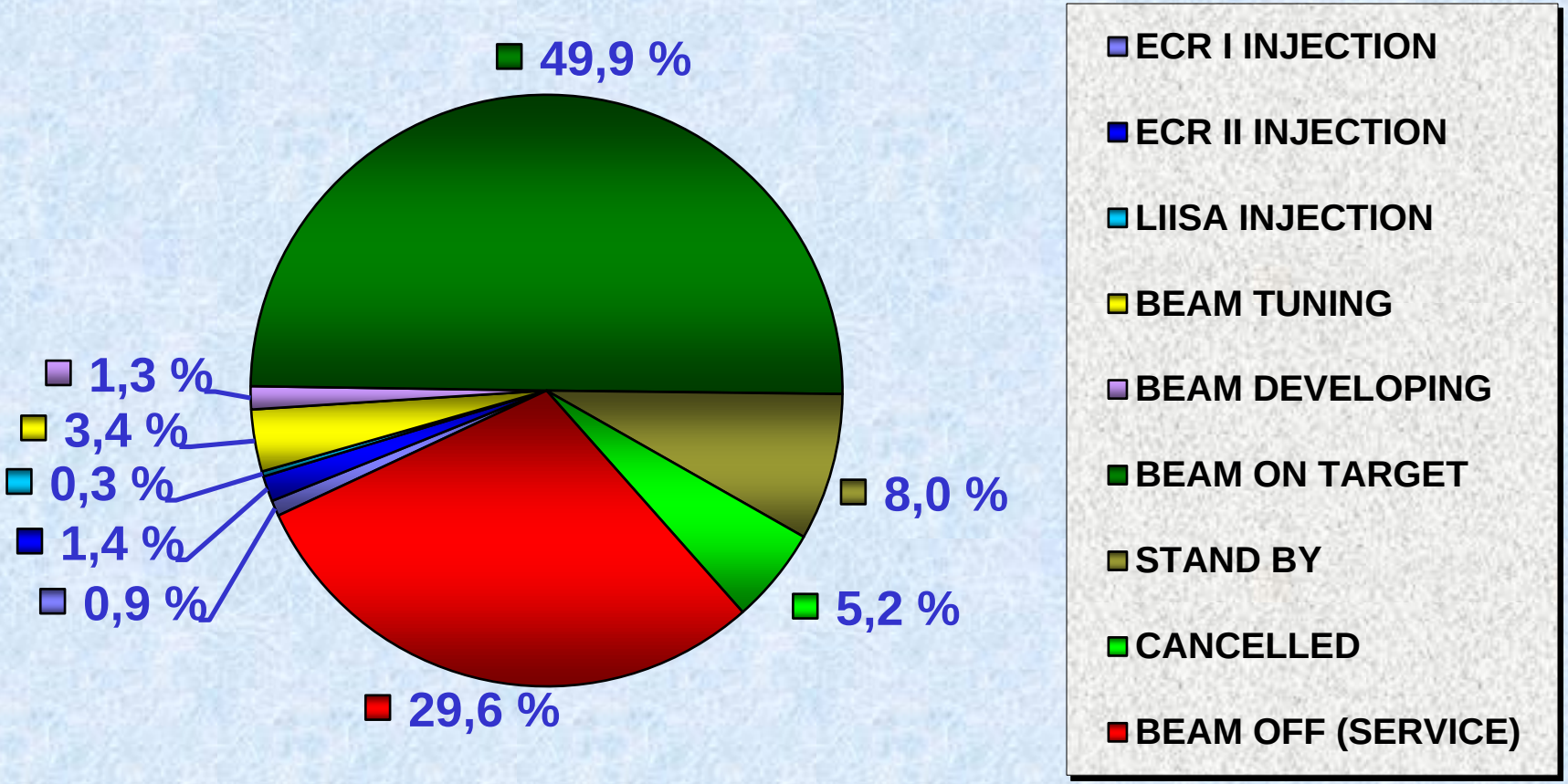
Monthly Use in 2011



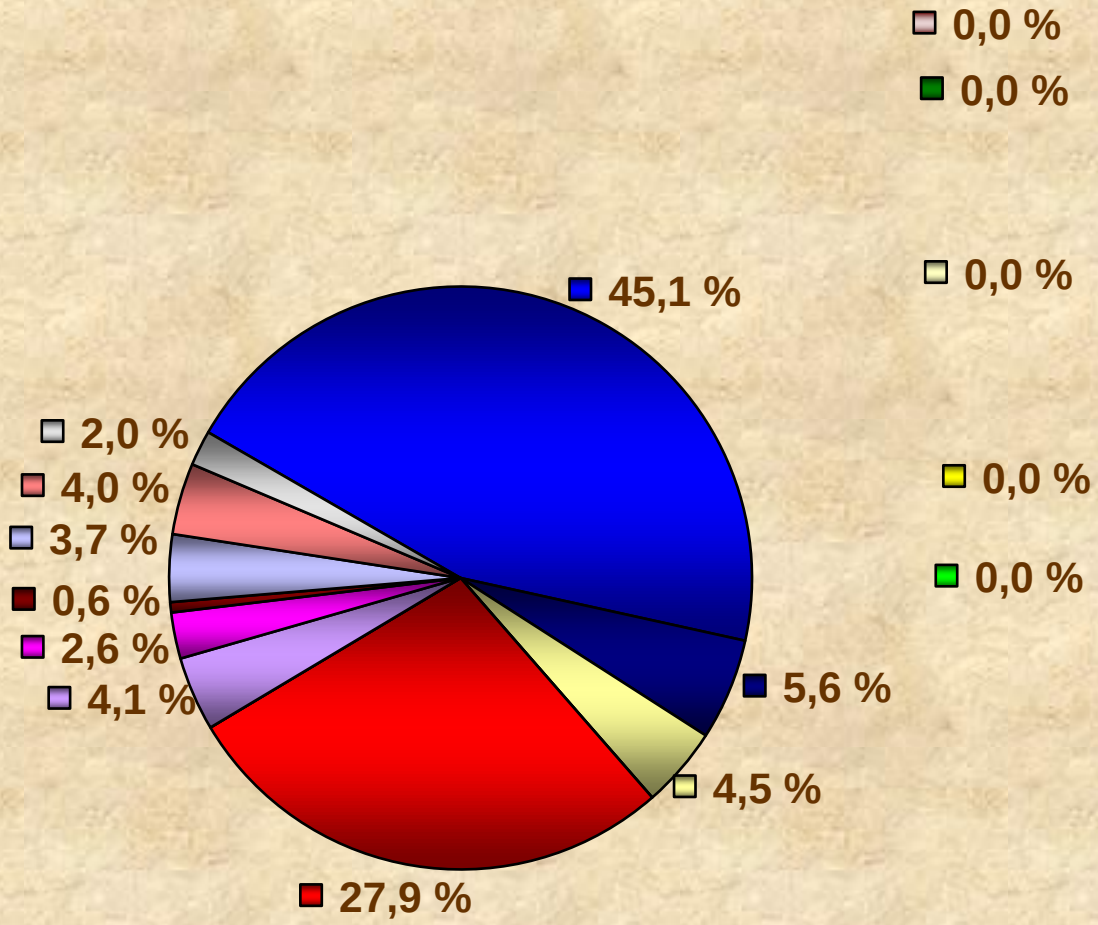
Installation of new dipoles and re-arranging other elements in January 2011



Cyclotron Use in 2011

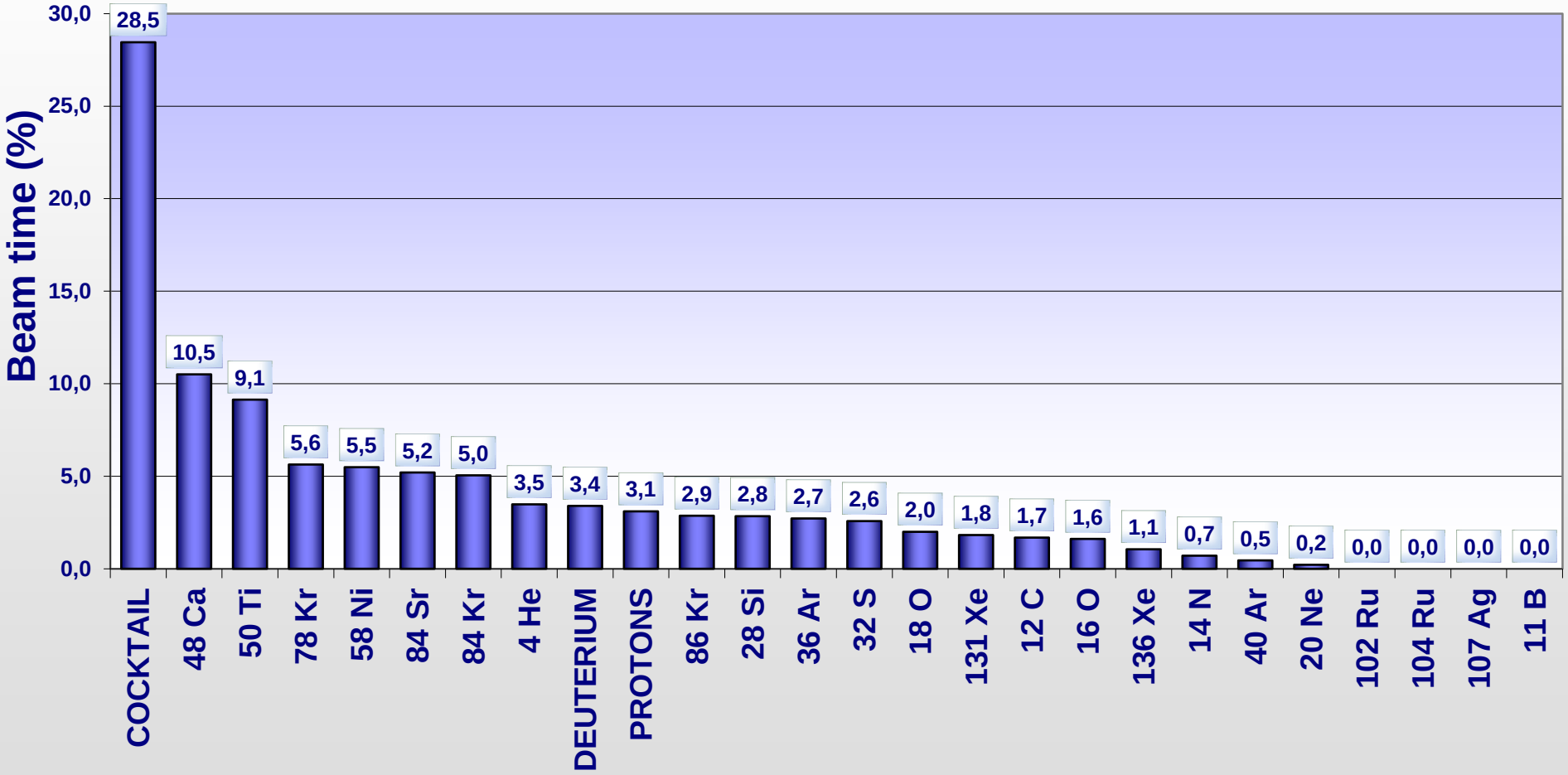


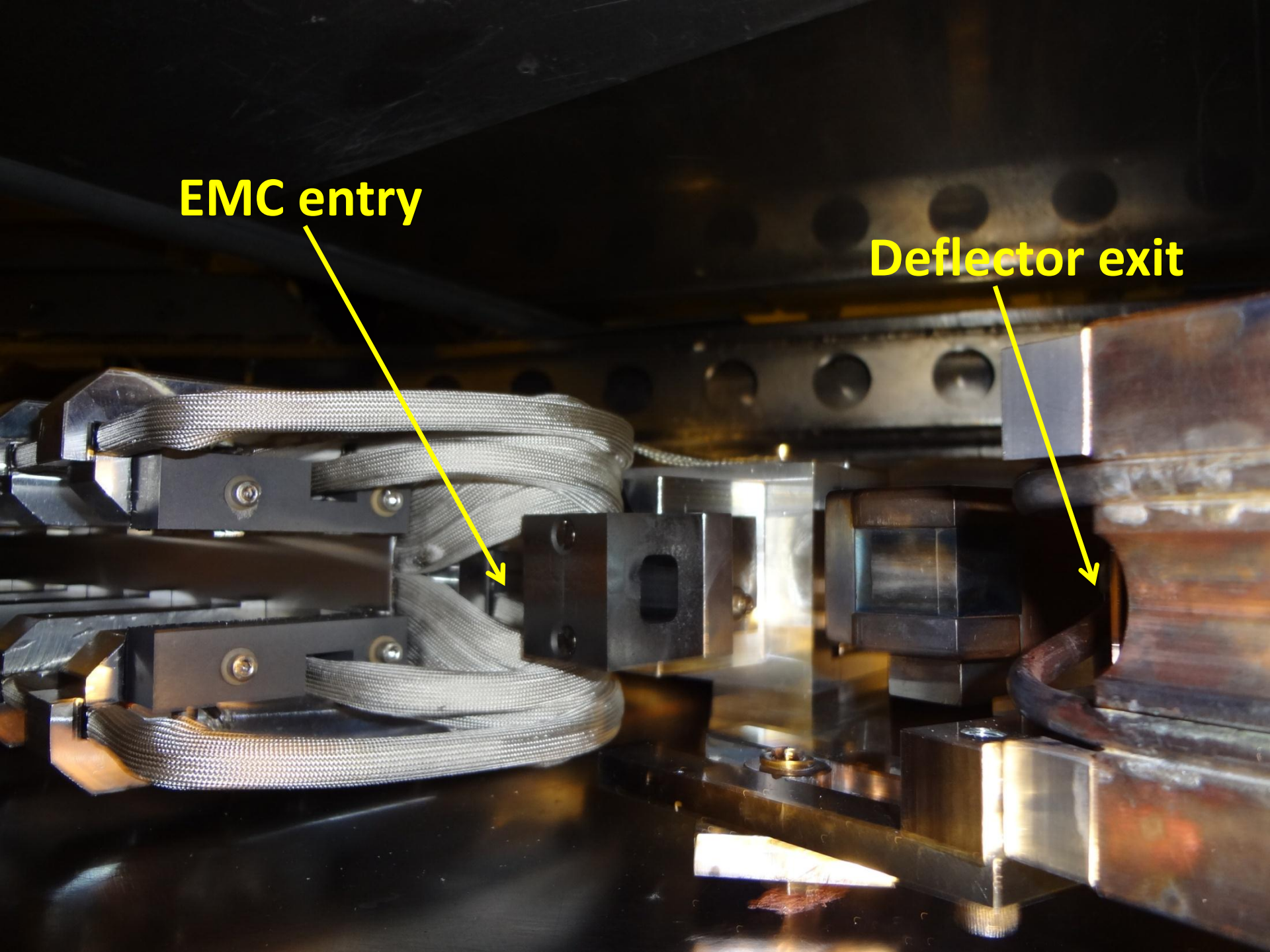
Beam Users in 2011 (Total Hours)

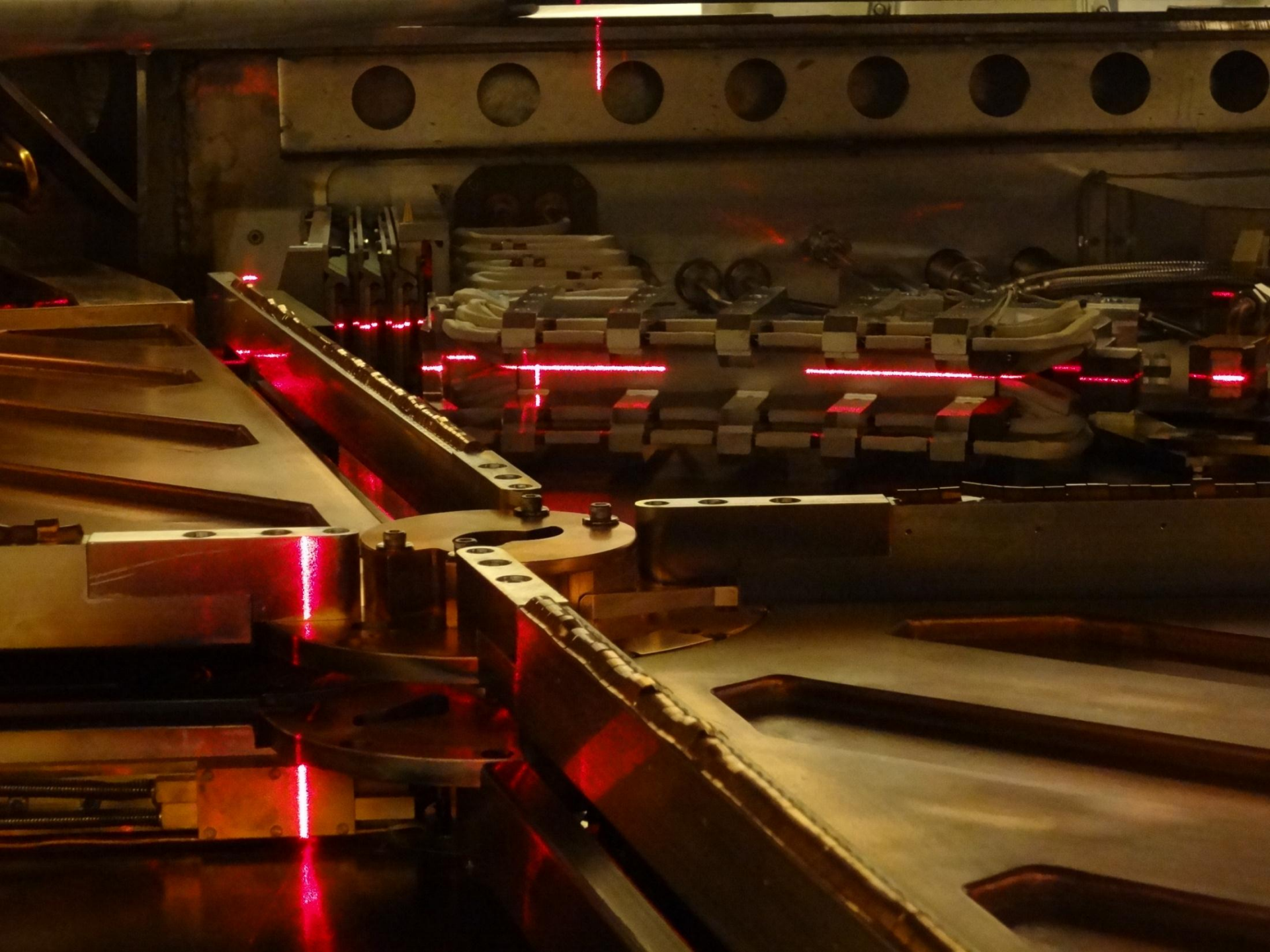


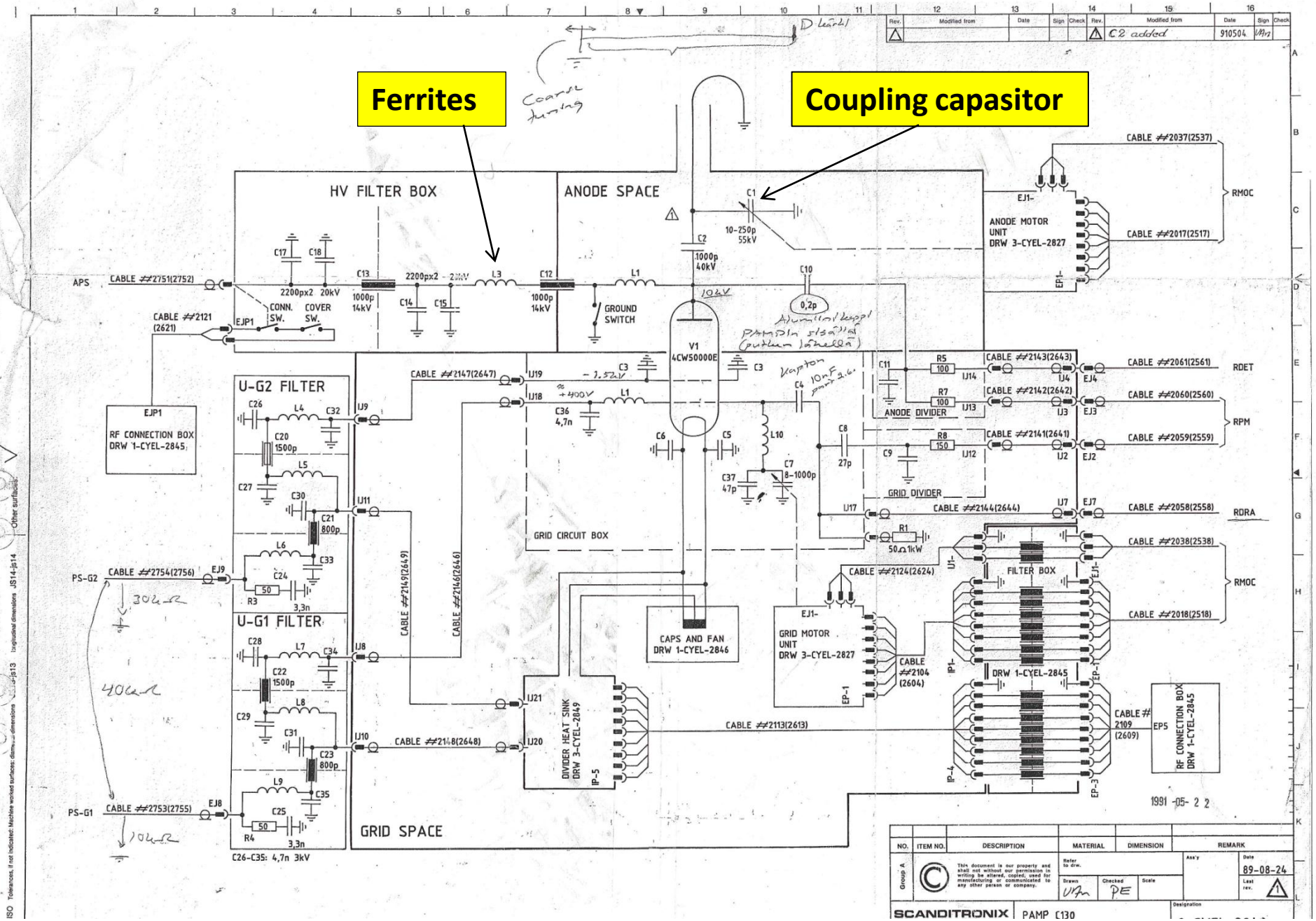
- MAP
- IGISOL
- JUROGAM
- RITU
- LSC
- SMC
- RADEF
- HENDES
- APPLIED/T-LINE
- APPLIED/P-LINE
- APPLIED/A-LINE
- APPLIED/N-LINE
- SAGE
- OXYPHEN
- BEAM DEVELOPING

Accelerated Ions in 2011 (All)

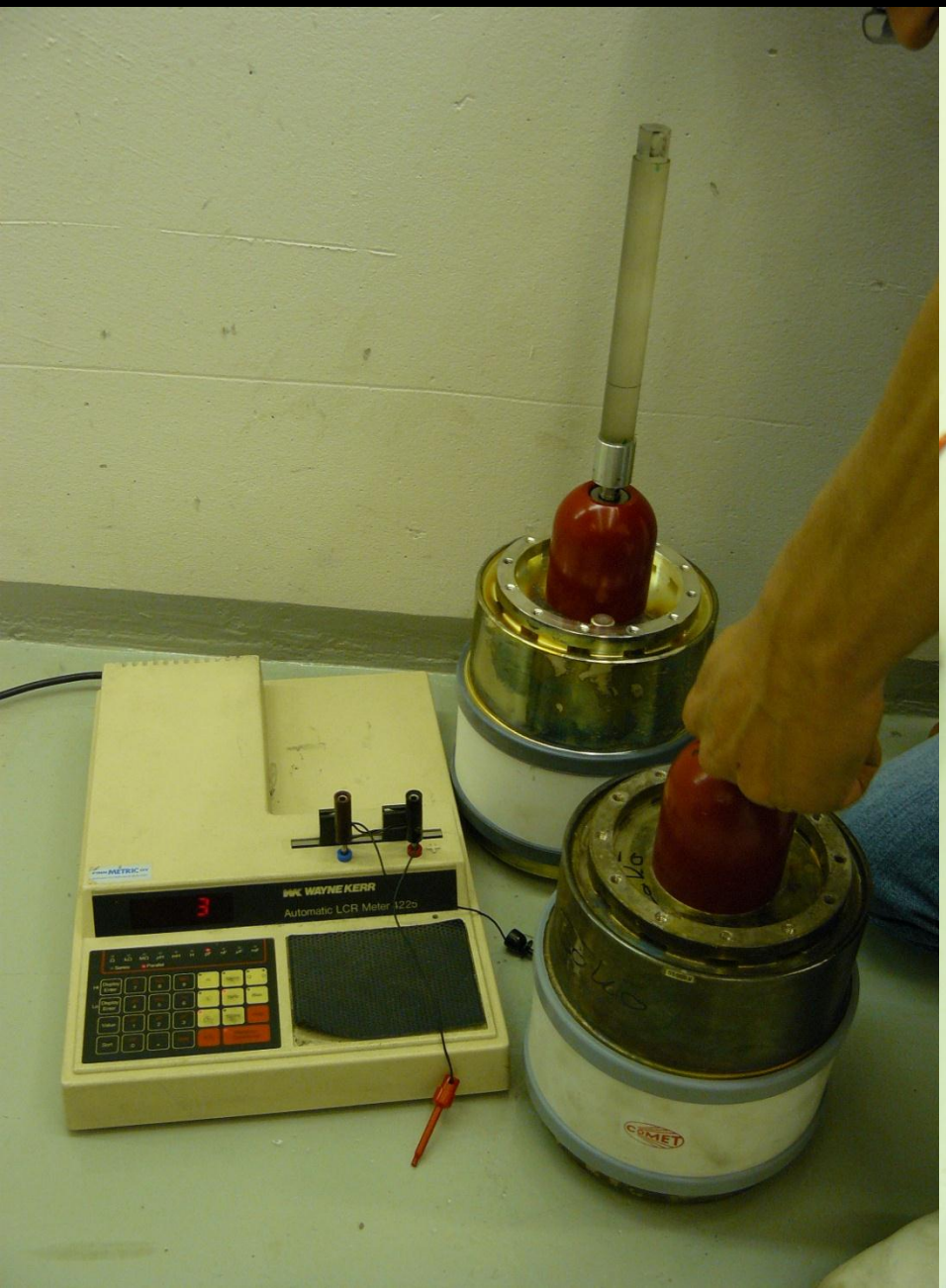



EMC entry
Deflector exit



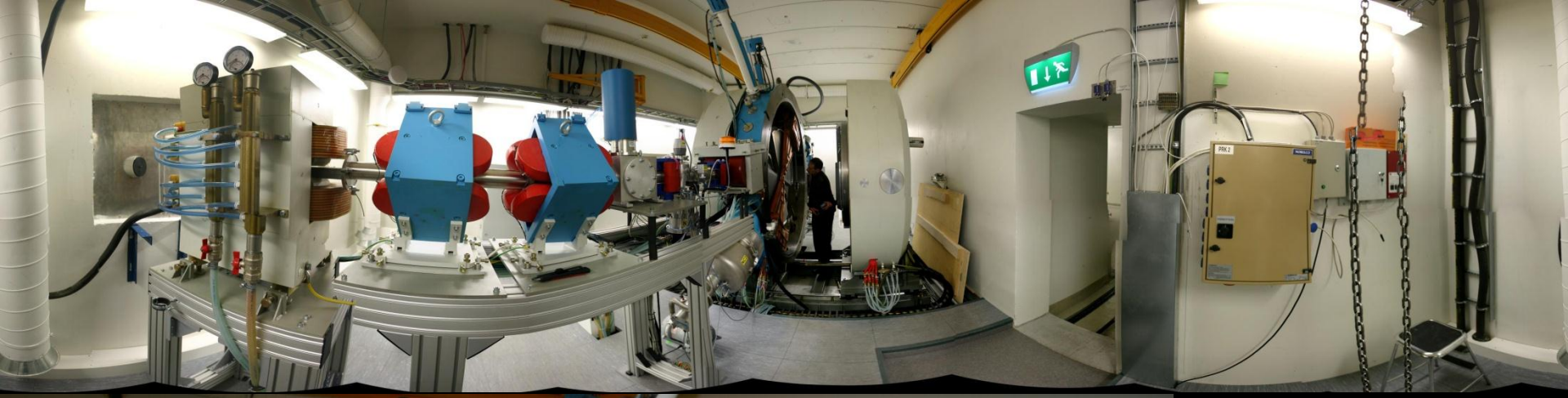

Ferrites
Coupling capasitor
HV FILTER BOX
ANODE SPACE
U-G2 FILTER
U-G1 FILTER
GRID CIRCUIT BOX
GRID SPACE
ANODE MOTOR UNIT DRW 3-CYEL-2827
ANODE DIVIDER
GRID DIVIDER
GRID MOTOR UNIT DRW 3-CYEL-2827
FILTER BOX
DRW 1-CYEL-2845
CAPS AND FAN DRW 1-CYEL-2846
DIVIDER HEAT SINK DRW 3-CYEL-2849
RF CONNECTION BOX DRW 1-CYEL-2845
V1 4CW50000E
GROUND SWITCH
CONN. SW.
COVER SW.
C26-C35: 4,7n 3kV
SCANDITRONIX
PAMP C130

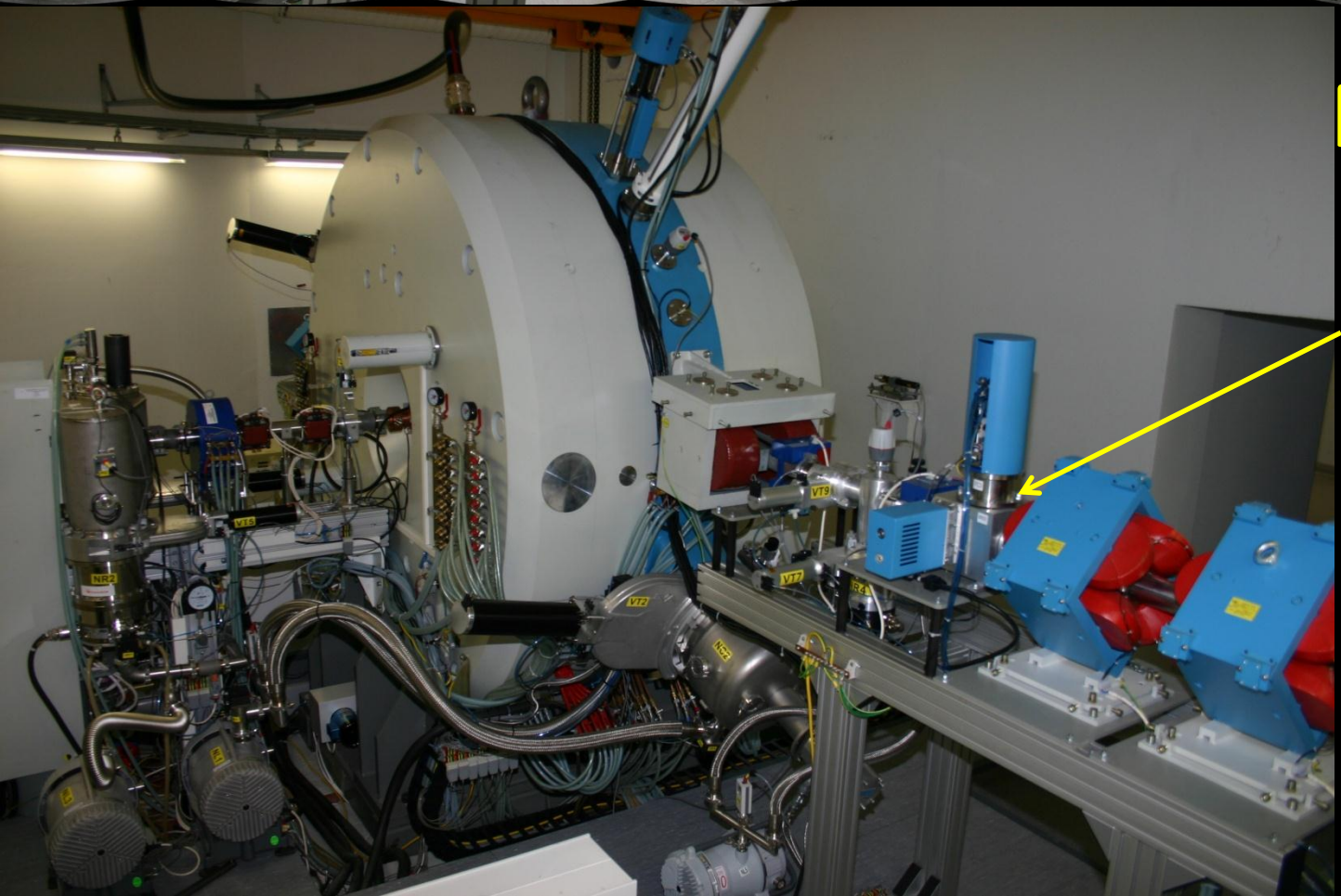
Ferrites for filtering


WAYNE KERR
Automatic LCR Meter 122a
COMET

55000 V
COMET

G406 250 PSI W.P.





MCC30/15

200 μA protons
62 μA deuterons

History

- First negotiations in 2004 with NIIEFA and Machinoimport
- Two years of negotioations and waiting…
- 30 MeV H^- cyclotron MCC30/15
  - from NIIEFA (Efremov Institute, St. Petersburg)
  - as a partial compensation of former Soviet Union debt to Finland (Inter-governmental agreement between Finland and Russia, August 15, 2006)
  - Full system with two beam lines

And 6 months later...

Contract, February 20th, 2007

University of Jyväskylä:

Rector Aino Sallinen

Adm. Director Erkki Tuunanen

Alexey Lyutik, Machinoimport

Mikhail Vorogushin, NIIEFA

(Valery Shlyamin, Russian Trade Representative)

And 4 moths later...

MACHINOMPORT

JOINT STOCK COMPANY
FOREIGN ECONOMIC ASSOCIATION
RF,119330, Moscow, Mosfilmovskaya str. 35

Tel. +7 (495) 981-99-64, 143-87-97 Fax +7 (495) 143-87-39
e-mail: msm@machim.ru

20.06.2007. Our Ref № 50-0705/081

To Your Ref. № Dt.

University of Jyvaskyla, Finland
Department of Physics
Attn.: Mr. Pauli Heikkinen
e-mail: Pauli.Heikkinen@phys.jyu.fi

Dear Mr. Heikkinen,

We are pleased to inform you that our mutual Contract No 50-0701/052174 dated 20.02.2007. for the delivery of Cyclotron was finally approved by the Russian Authorities on 19th of June 2007. So, this date could be the date of coming the Contract into force if you have already received the approval of the Ministry of Trade and Industry of Finland. Please kindly confirm th[illegible] as soon as possi[illegible] order we could give official notificati[illegible] the Contract (invoice with TAP P[illegible] will be forwarded for y[illegible]

Looking f[illegible]

Order placed 19th of June, 2007

2008-08-28

2008-10-01

2009-06-30

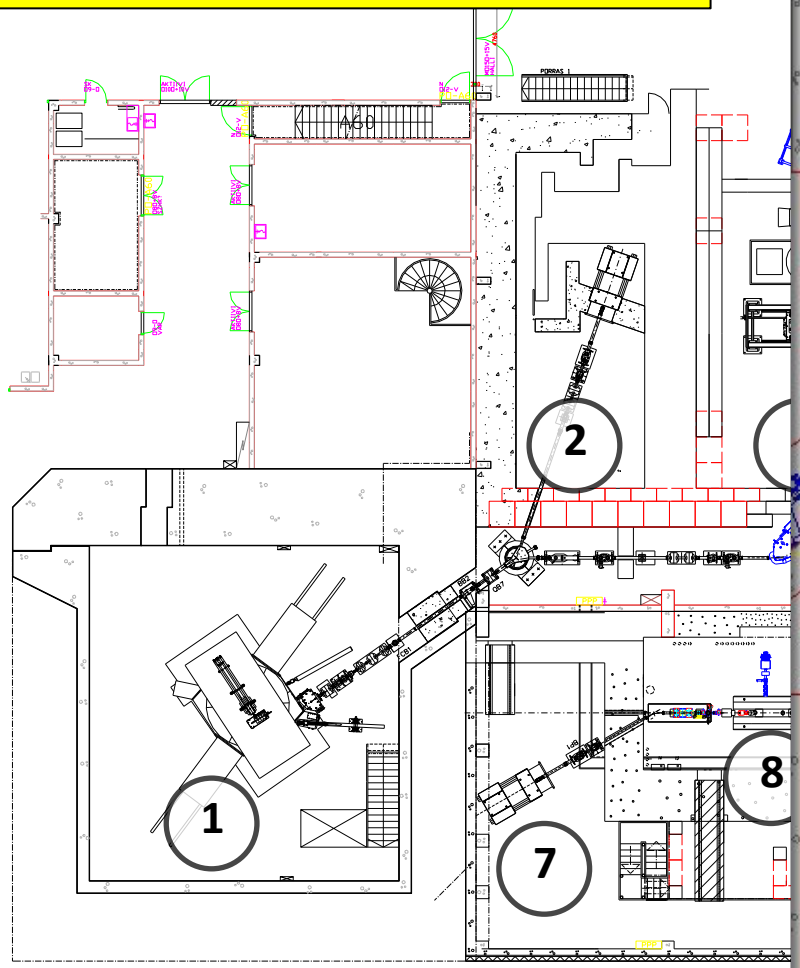
2009-08-10
NOSTOKONEPALVELU

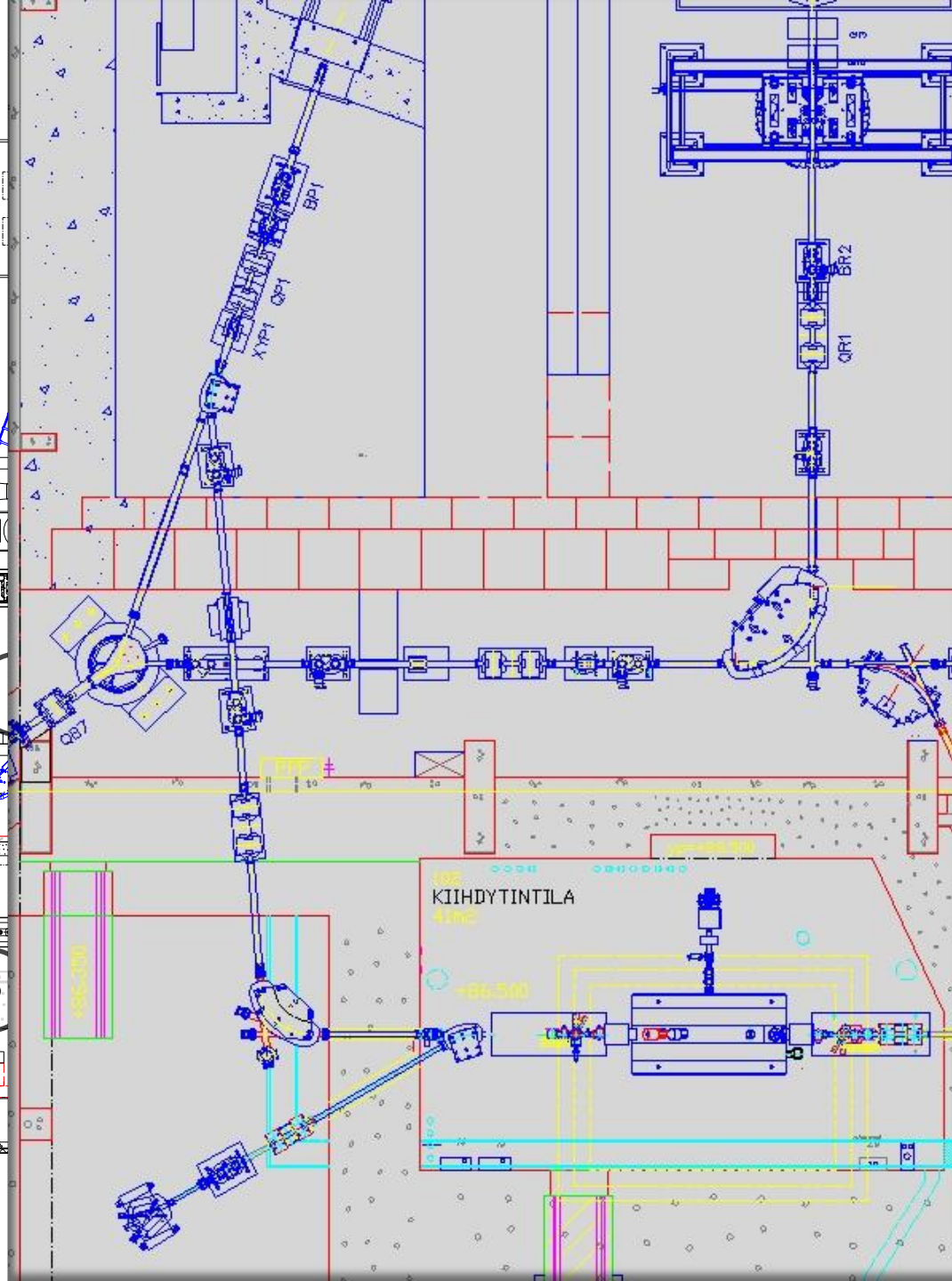
2009-08-11
01:15 am

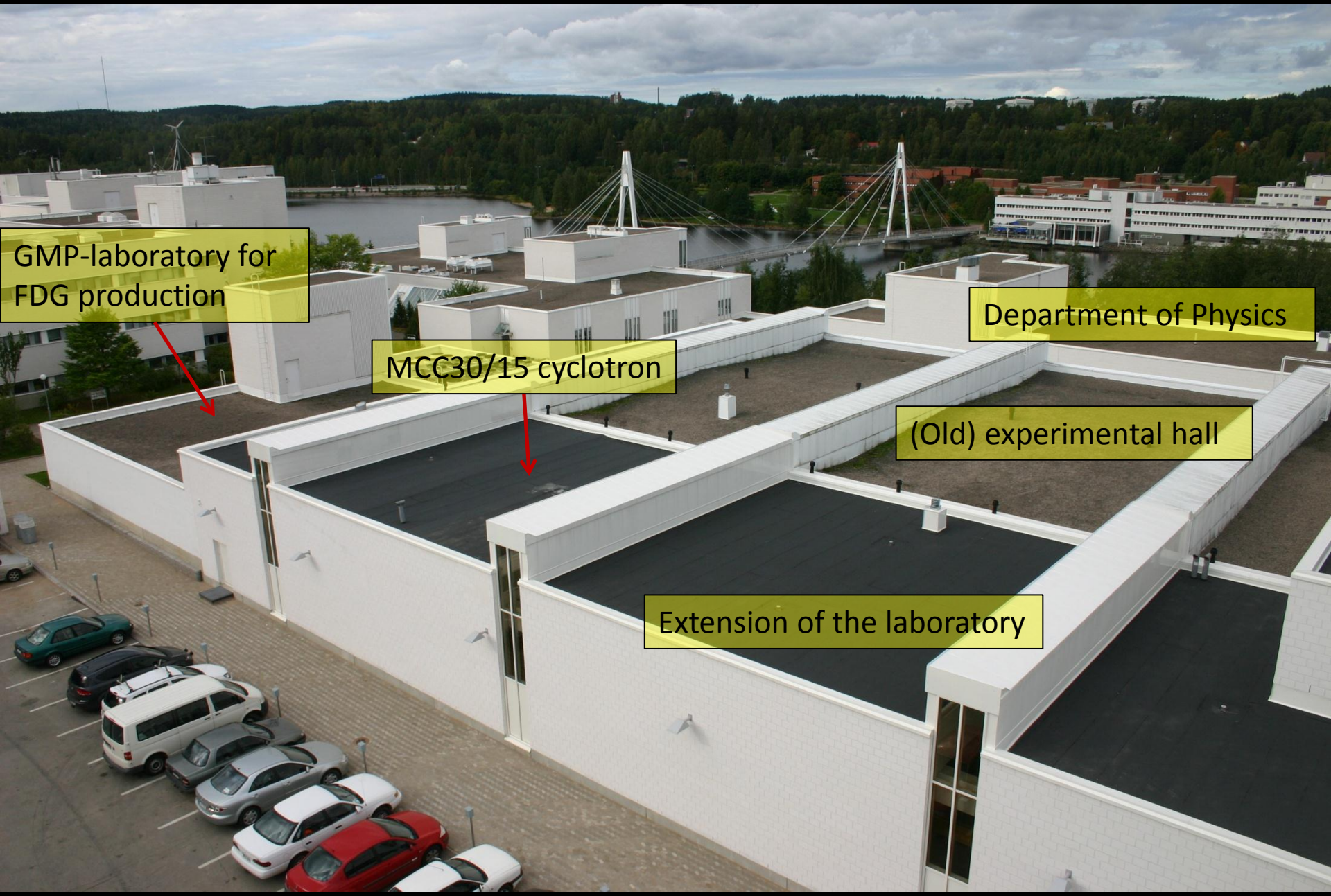
Training of the JYFL staff

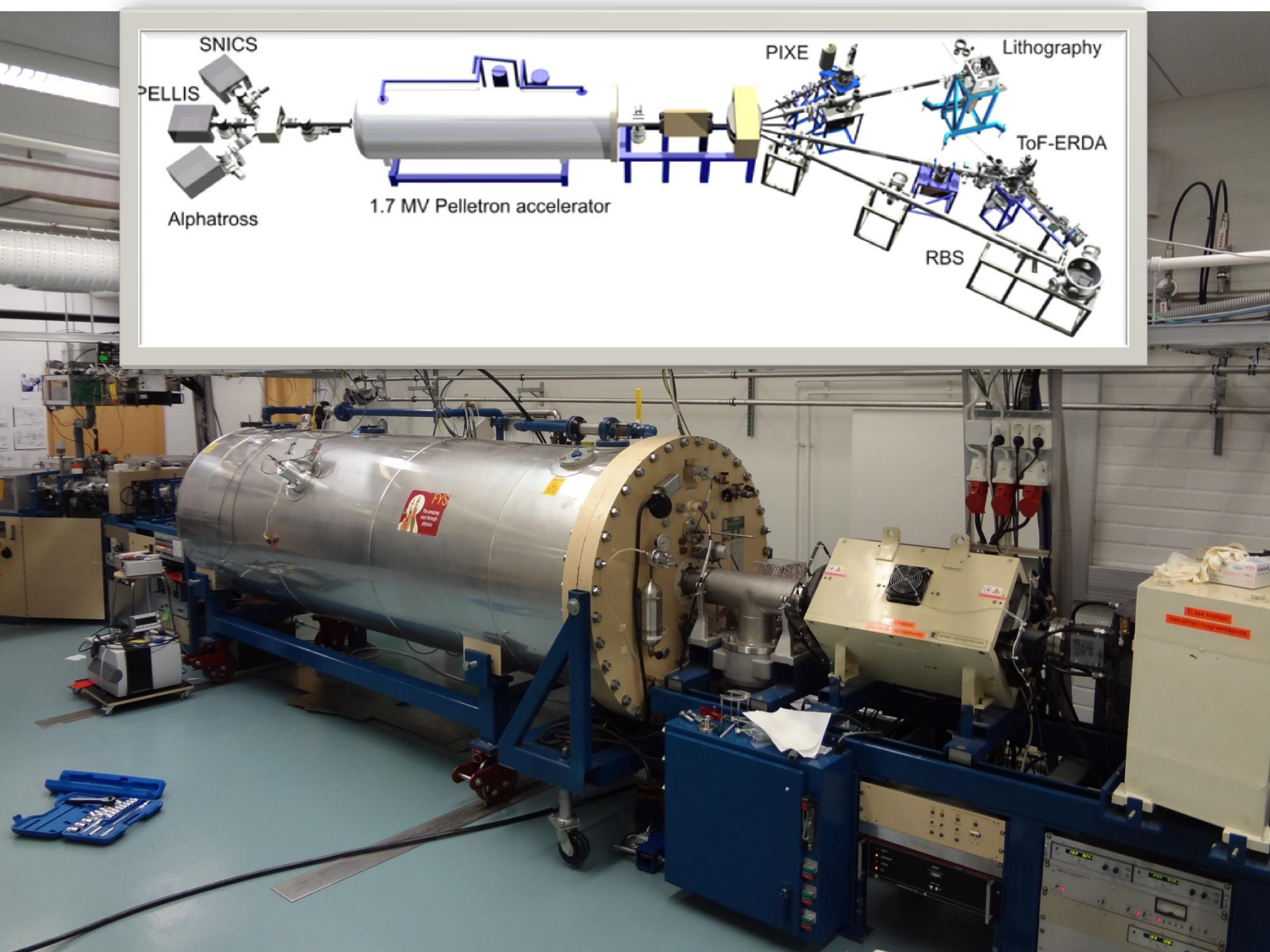
IGISOL

Isotope production

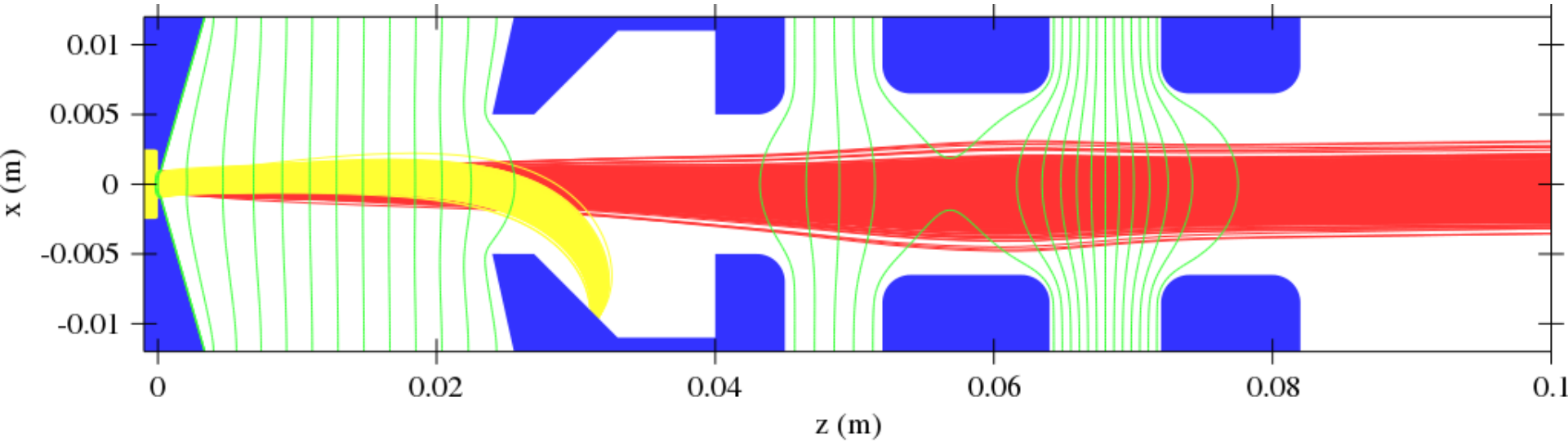





GMP-laboratory for FDG production
MCC30/15 cyclotron
Department of Physics
(Old) experimental hall
Extension of the laboratory


SNICS
PELLIS
Alphatross
1.7 MV Pelletron accelerator
PIXE
Lithography
ToF-ERDA
RBS

PELLIS



Maximum tested:

Filament: 3.40 V / 82.7 A

Arc: 100 V / 7.8 A

Beam current: 55 uA H- at 10 keV energy

Parasitic electrons: 2.45 mA e-

Beam emittance: 0.025 mm mrad (95% filtered. normalized rms)