

Institut Pluridisciplinaire Hubert Curien

Timetable of October, 24th:

- 11:30 Presentation of IPHC and program - Isabelle Ripp-Baudot
- 11:50 The Belle II experiment - Yutaka Ushiroda
- 12:10 Physics at Belle II - Karim Trabelsi
- 12:30 Lunch
- 14:00 The PICSEL group - Auguste Besson
- 14:20 The micro-electronics group - Claude Colledani
- 14:40 Strasbourg possible contribution - Isabelle Ripp-Baudot
- 15:00 The interaction region and BEAST II - Shuji Tanaka
- 15:20 The PLUME ladder - Jérôme Baudot
- 15:40 Coffee break
- 16:00 Visit of the test, design and assembling rooms



CNRS and IN2P3

- **CNRS**: the National Center for Scientific Research
 - Public organisation (Ministry of Higher Education and Research).
 - Funded in 1939.
- **IN2P3**: National institute for subatomic research
 - **17 laboratories** (+ several infrastructures, cf. the Computing Centre CC-IN2P3 of Lyon)
 - **9 labs with experimental physics at particle colliders**
 - Partnership with the French Atomic Energy and Alternative Energies Commission (CEA).
 - Human Resources: 2509 staffs
 - 509 researchers + 400 academics,
 - 1 600 engineers + technicians,
 - ~500 PhD students + postdoctoral fellows
 - Director: **Jacques MARTINO**
 - 4 Scientific Deputy Directors (DAS): Particle Physics, Astroparticles and Neutrinos, Nuclear and Hadron Physics and Theory, Accelerators and biomedical.
 - Currently: no Particle Physics DAS (will be appointed soon).



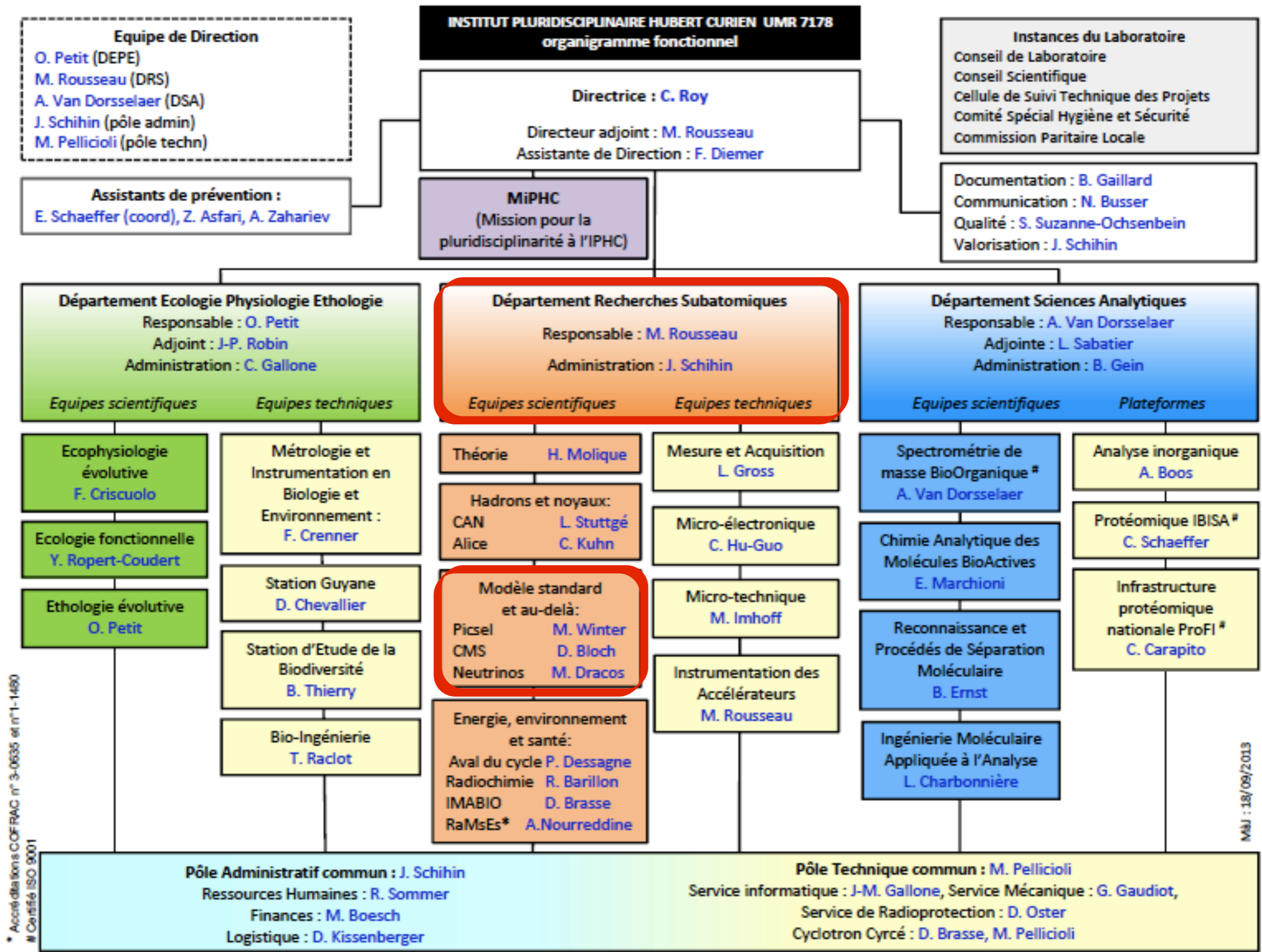
IPHC Strasbourg

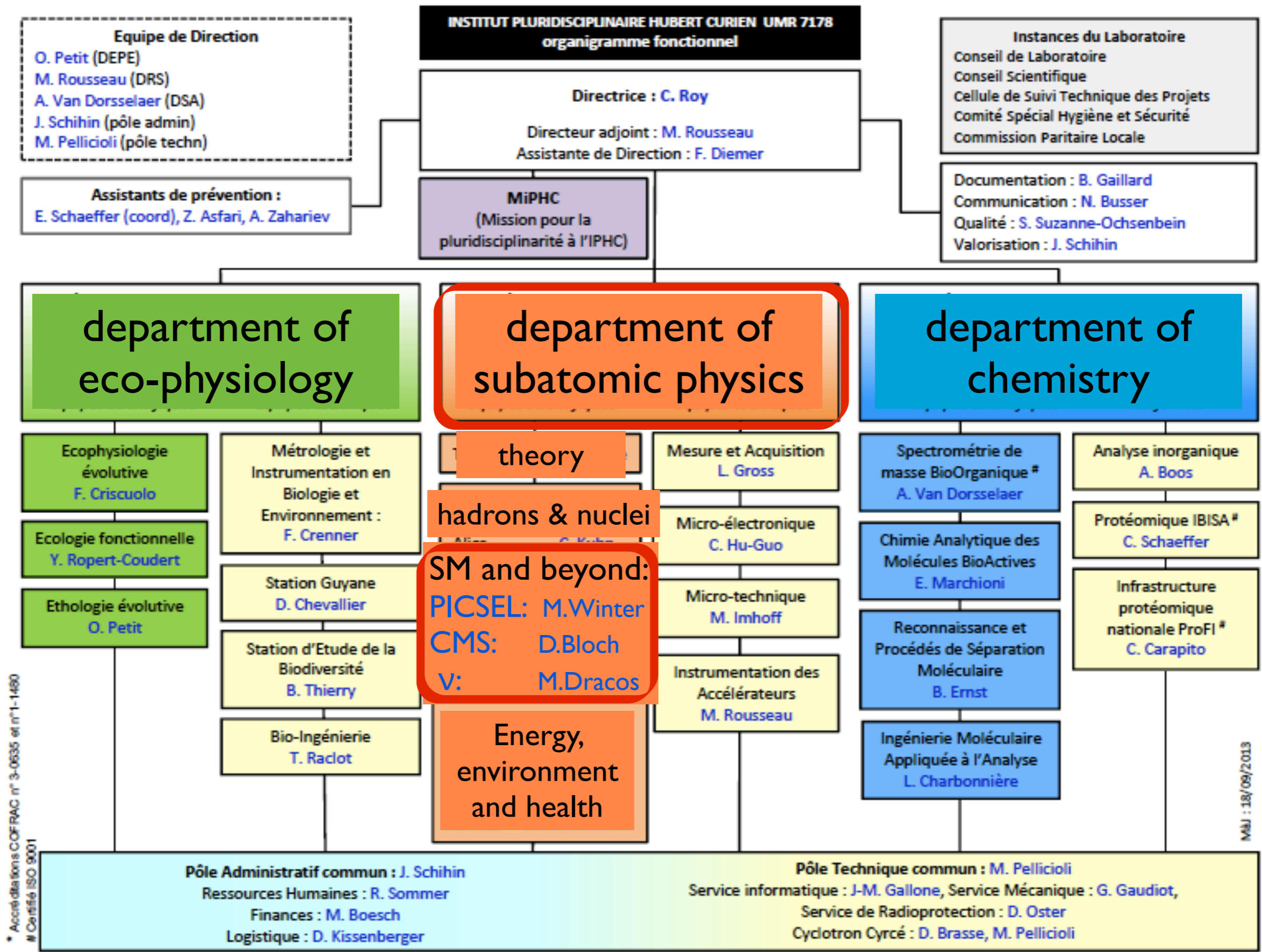
- 3 departments: DRS (subatomic physics) + DSA (chemistry) + DEPE (eco-physiology)
- Originally: DRS was a “stand-alone” IN2P3 laboratory
Since 2006, creation of a joined laboratory of labs belonging to 3 national institutes from CNRS: INC (chemistry), INEE (ecology) and IN2P3 (subatomic physics).
 - **interdisciplinarity**
- **Common base: high-level scientific instrumentation.**
Particularity: high number of technicians and engineers (cf. IN2P3 in general).
- **Cyclotron CYRCé:** built end of 2012, inauguration on October, 18th 2013.
 - 24 MeV particle accelerator → unique in Europe (cost: 4.85 M€)
 - Production of radio-isotopes (^{18}F , ^{64}Cu , ...) for diagnostics and therapy.
- IPHC is involved (with responsibilities) in 5 Masters.
In subatomic physics:
 - Radiation Physics, Instrumentation, Detectors and Imaging (medical, biology).
 - Subatomic and Astroparticles Physics



CYRCé

CYclotron pour la ReCherche et l'Enseignement

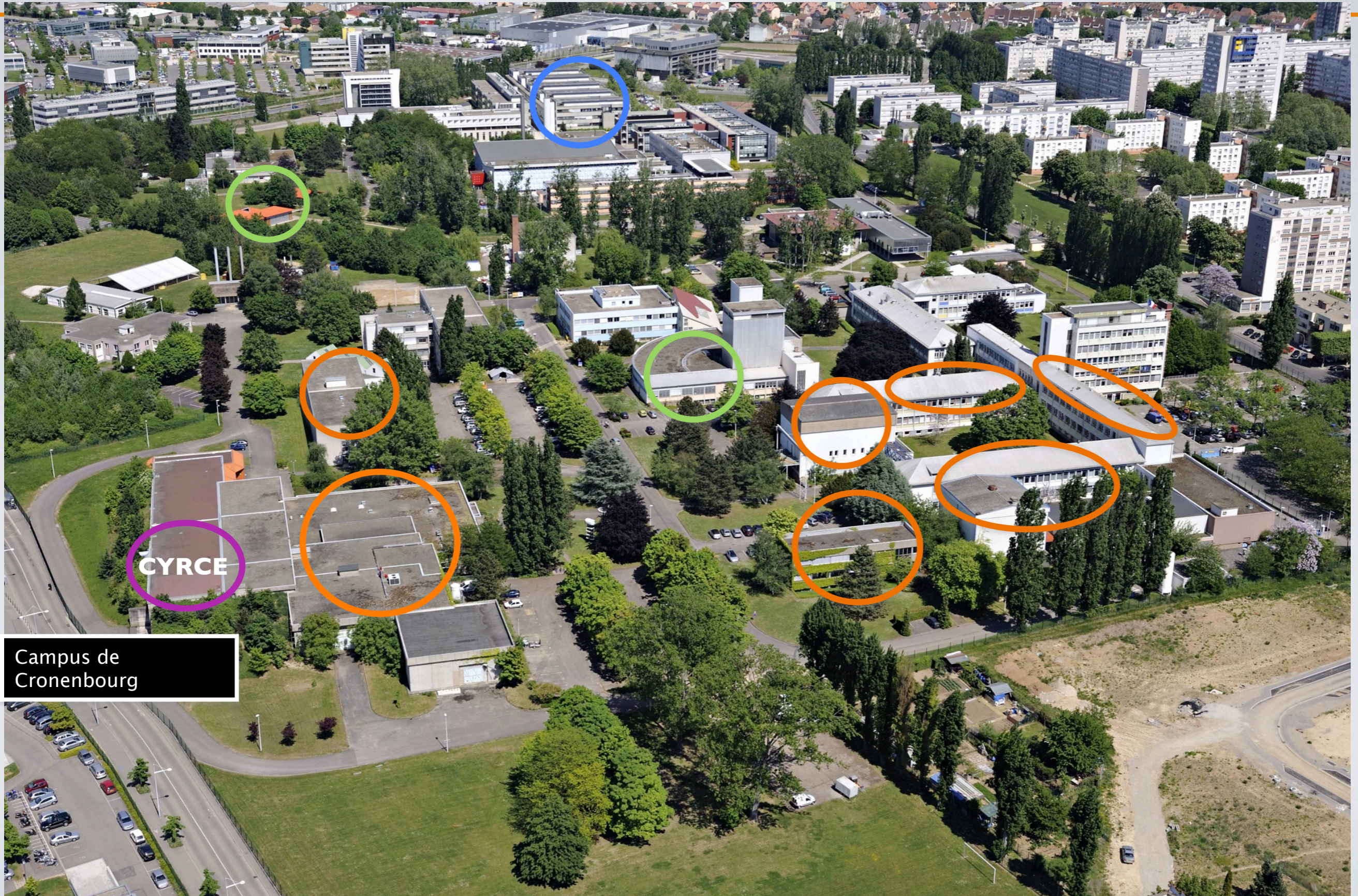


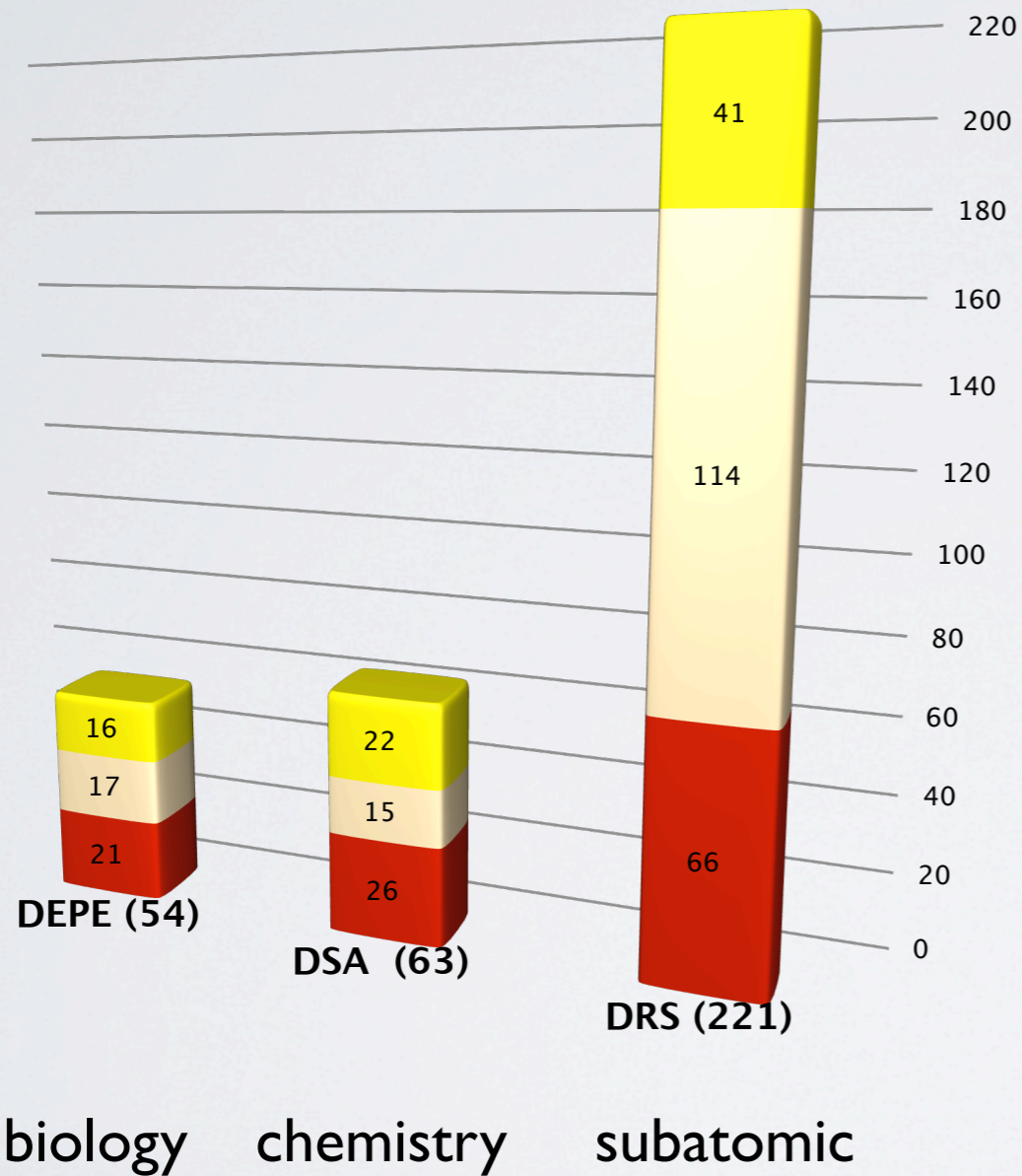


IPHC

DRS DEPE DSA

Superficie : 24 180 m²





- **Total: 368 employees**
 - staff: 259
 - post-docs: 30
 - PhD students: 79
- + ~200 practical trainers / year.
- Subatomic physics: 221 employees
 - CNRS (full research): 37
 - Academic (teaching): 29
 - Technical staff: 114
 - PhD students: 41

Particle physics at IPHC today

group	researchers	engineers	postdocs	PhD students	TOTAL
ALICE	3	-	2	1	6
CMS	9	2	2	3	16
Neutrinos	5	8	1	1	15
PICSEL	4	16	2	2 (physics) +7 (micro-elec)	31
theory	5	-	-	2	7
Total	26	26	7	16	75

- Participation / responsibilities in design and construction of:
 - Target Tracker of OPERA at CNGS.
 - Vertex detector (silicon strips) and its upgrade (pixels) of STAR at RHIC.
 - Inner Tracker (silicon strips) and its upgrade (pixels DAQ) of CMS at LHC.
 - Vertex detector (silicon strips) and its upgrade (pixels) of ALICE at LHC.
- ➔ expertise in designing and assembling silicon sensors.

Situation in Strasbourg

- PICSEL group = **P**hysics with **I**ntegrated **C**mos **S**ensors and **E**lectron machines
 - Particular interest in data analysis at e^+e^- colliders: Super Flavour Factory and ILC.
- **Ambition of performing data analysis in the PICSEL group:**
 - Long period of detector development motivated by ILC.
 - All physicists in this group had an activity of data analysis in the past (DELPHI, OPAL, DØ, CMS, STAR, ...).
 - **Has to be done in synergy with the group activities:**
 - Expertise in CMOS detectors design and test.
 - Knowledge in tracking.
- Former contribution to the SuperB project until its cancellation.
 - Existence of a strong commitment in the SuperB project in France, mainly at LAL- Orsay, since the beginning.

Strasbourg



- The city of Strasbourg:
 - ~300 000 (500 000) inhabitants
 - Capital city of Europe
 - On the German border
- The University of Strasbourg:
 - Since 1538
 - ~45 000 students
 - 2700 researchers
 - Ranking: 4th in France
97th in the world (Shanghai)