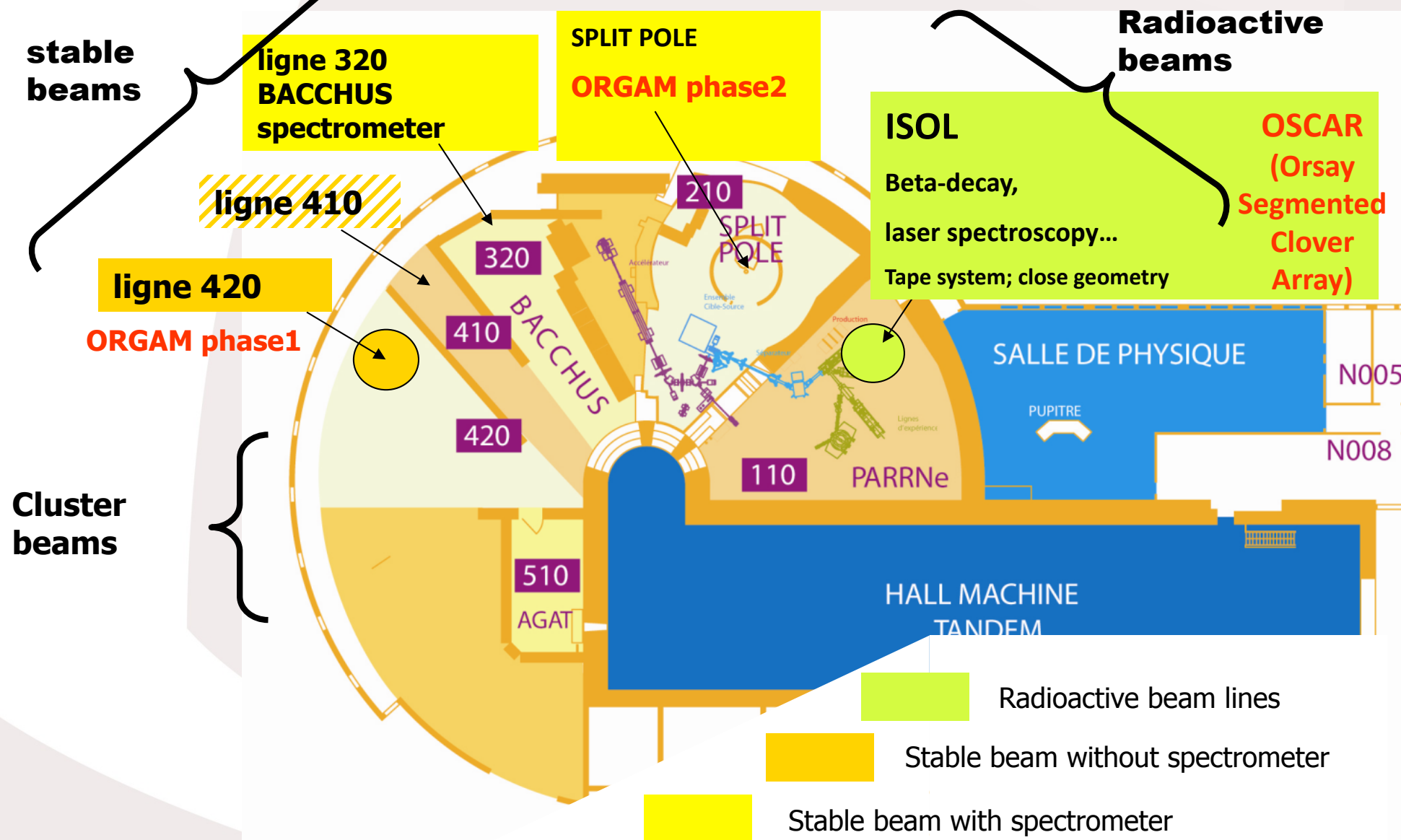




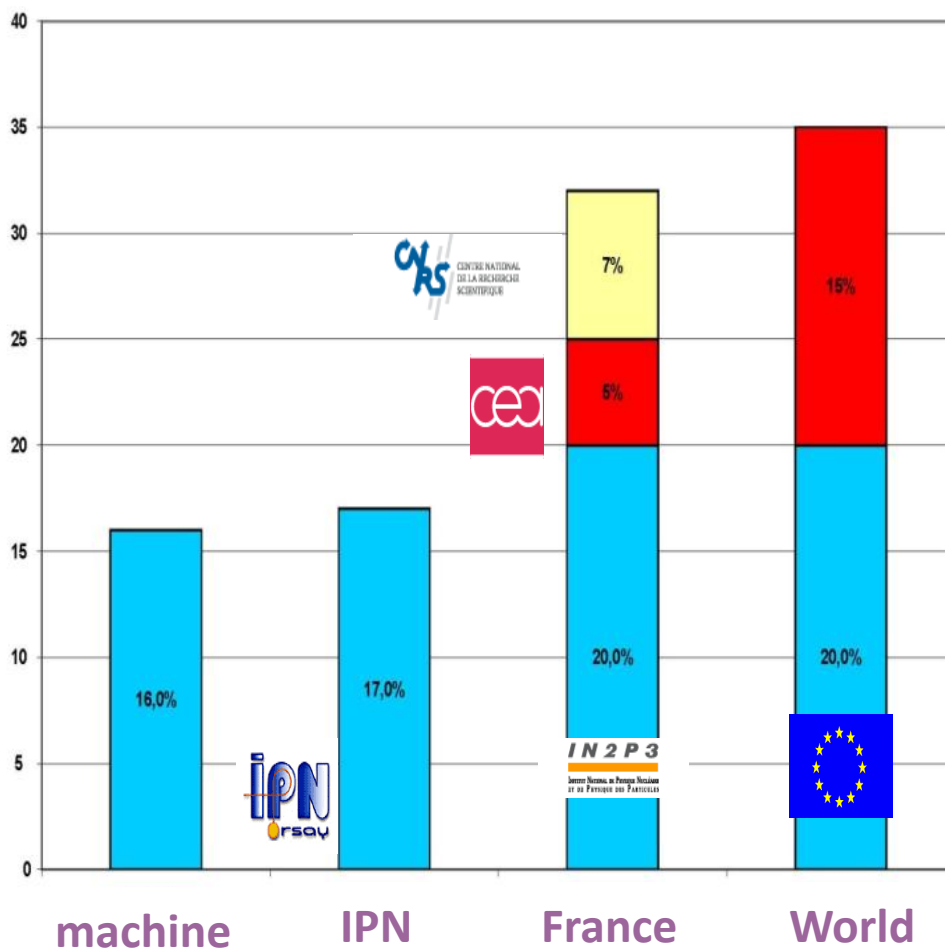
The ALTO facility at IPN



ALTO a hybrid facility



A hybrid facility ... a versatile array



The Tandem-ALTO facility is part of the IPN Orsay

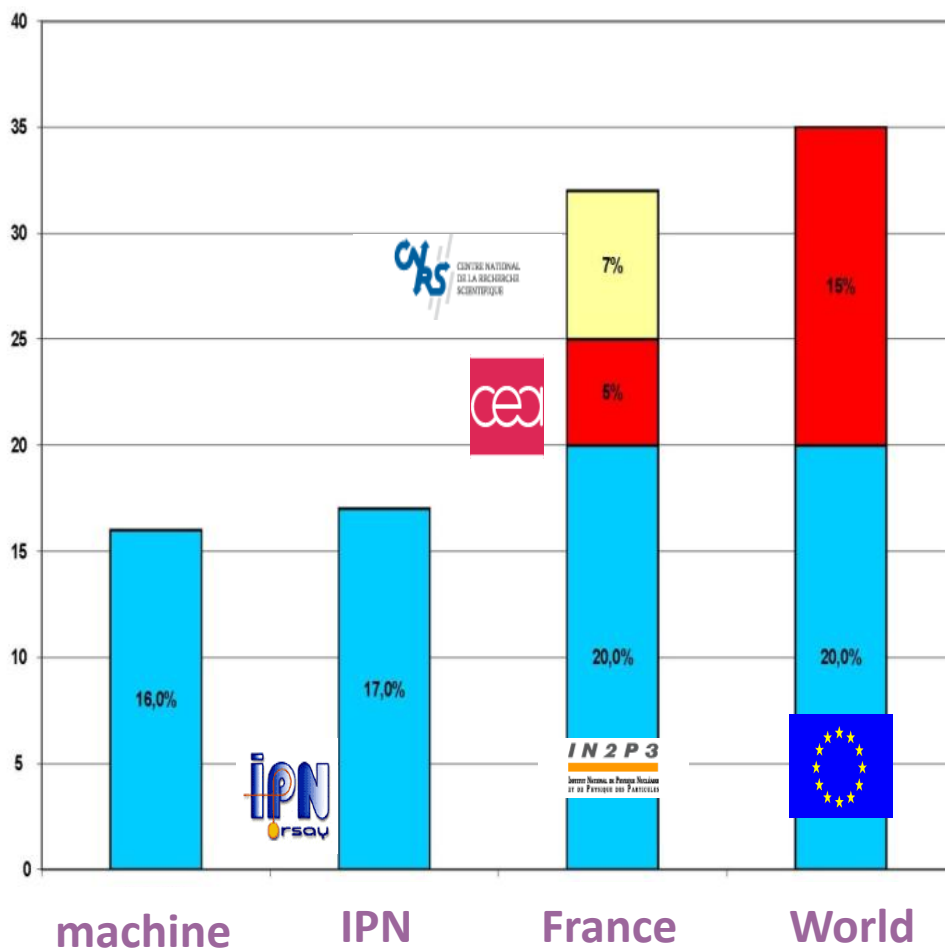
4000 h per year

Possibility to run in the future
Alto and Tandem simultaneously
28 engineers and technicians for
Technical support
PAC : Chair R. Casten

- R. F. CASTEN , Yale University
- E. BALANZAT (CIMAP – Caen)
- D. BALABANSKI (Sofia – Bulgarie)
- S. GREVY (CENBG)
- E. KHAN (IPNO)
- W. Korten (SPhN-IRFU-CEA)
- B. RUBIO (Séville-Espagne)
- C. Trautmann (GSI- Allemagne)

Aurora Tumino (Catania) - New

A hybrid facility ... a versatile array



51 publications (2006-2010)

The Tandem-ALTO facility is part of the IPN Orsay

4000 h per year

Possibility to run in the future
Alto and Tandem simultaneously
28 engineers and technicians for
Technical support
PAC : Chair R. Casten

- Nuclear structure of exotic nuclei
- Cluster in nuclei
- Nuclear astrophysics
- Nuclear waste
- Nuclear physics for energy and environment
- Atomic physics: cluster atoms collisions
- Nanotechnology (cluster atoms)
- Instrumentation

ORSAY PAC Proposals

	Title	Spokesperson	UBT asked for	UBT granted	TNA Eligibility
1	Planck bolometer particles tests	F. Pajot M. Chabot	24		NO
2	Collision AGregat ATome (AGAT)	M. Chabot	30		NO
3	Measurement of the Quasi-Elastic Barrier Distributions of the 40,44,48Ca+120Sn	E. Crema M.A.G. Alvarez	10		YES
4	Destruction of ^{26}Al in massive stars : study of the $^{26}\text{Al}(n,p)^{26}\text{Mg}$ and $^{26}\text{Al}(n,\alpha)^{23}\text{Na}$ reactions through the $^{27}\text{Al}(p,p')^{27}\text{Al}$ reaction	N. De Sereville	21		YES
5	Direct production of Tc and Mo radioisotopes with proton and deuterium beams	D. Gardes	12		NO
6	Alpha cluster structure of ^{12}C using active target	J. Gibelin M. Freer	6		YES
7	Study of resonant states in ^{10}C , ^9B and ^{10}B and their impact on the cosmological lithium problem	F. Hammache	43		YES
8	Test experiment for the CSNSM/IPNO/GANIL Plunger	J. Ljungvall	21		YES
9	Search for isomeric states in the N=80 nuclei ^{136}Ba , ^{138}Ce and ^{142}Sm	C. Petrache	42		NO
10	Diffusion of xenon in UO_2 under heavy ion irradiation at high temperature	Y. Pipon	16		NO
11	Diffusion of xenon in ZrC under heavy ion irradiation at high temperature	Y. Pipon	8		NO
12	Very high electronic stopping power ions irradiation in wide band gap wurtzite semiconductors	I. Monnet	15		NO
13	Measurement of the $^{26}\text{Mg}(p,n)^{26}\text{Al}$ cross section of astrophysical interest	K.M. Spohr	21		YES
14	Fast-neutron-induced background in LaBr ₃ and BGO scintillators for high-energy space astronomy	J. Kiener	9		NO
15	Lifetime of the O^+_2 state in ^{160}Er	D.L. Balabanski	21		YES
16	Single-particle structure in the second minimum. g-factor measurements of fission isomers	G. Georgiev			
17	TETRA - setup and cluster fission investigation for heavy and superheavy nucleus	Y. Penionzkevich	15		NO

314

0

DB	D. BALABANSKI	RR	Berta RUBIO
EB	Emmanuel BALANZAT	AK	Wolfram KORTEN

Title	Spokesperson	UBT granted	TNA Eligibility	Number of experiment	travel asked for
Measurement of the Quasi-Elastic Barrier Distributions of the 40,44,48Ca+120Sn	E. Crema M.A.G. Alvarez	15	YES	N-SI-35	13
Destruction of ²⁶ Al in massive stars : study of the ²⁶ Al(n,p) ²⁶ Mg and ²⁶ Al(n,α) ²³ Na reactions through the ²⁷ Al(p,p') ²⁷ Al reaction	N. De Sereville	21	YES	N-SI-36	15
Alpha cluster structure of ¹² C using active target	J. Gibelin M. Freer	6	YES	N-SI-37	9
test gaspard	D. Beaumel		YES	I-SI	
Study of resonant states in ¹⁰ C, ⁹ B and ¹⁰ B and their impact on the cosmological lithium problem	F. Hammache	43	YES	N-SI-38	
Measurement of the ²⁶ Mg(p,n) ²⁶ Al cross section of astrophysical interest	K.M. Spohr	21	YES	N-SI-40	7
Lifetime of the O ⁺ ₂ state in ¹⁶⁰ Er	D.L. Balabanski	21	YES	N-SI-41	10

127

54

29

0.537037037

person day asked for
97
97
42
84
70
390
139

0.356410256

travel granted	person day granted
5	30
10	40
3	12
4	29
7	28
29	139

The experiments selected in 2011 for an access to ALTO

Study of resonant states in ^{10}C , ^9B and ^{10}B and their impact on the cosmological Li problem



Measurement of the Quasi-Elastic Barrier Distribution of the $40,44\text{Ca}+^{120}\text{Sn}$



Lifetime of the 0^+_2 state in ^{160}Er



Measurement of $^{26}\text{Mg}(p,n)^{26}\text{Al}$ cross section of astrophysical interest



Alpha cluster structure of ^{12}C using active target



Destruction of ^{26}Al in massive stars: study of the $^{26}\text{Al}(n,p)^{26}\text{Mg}$ and $^{26}\text{Al}(n,\alpha)^{23}\text{Na}$ reactions through the $^{27}\text{Al}(p,p')^{27}\text{Al}$ reaction



Meson exchange enhancement of first forbidden β transitions in n-rich Sn nuclei



ORSAY PAC Evaluation Criteria and PAC Reports

TITLE

A) Proposal analysis

Importance?

The main motivation of the proposed....

Why in Orsay?

The experiment requires Beam time for a stable ion beam experiment with some risk of failure is more easily available at Orsay than in other facilities.

Need to do in 2011?

The work should be performed as soon as possible in view of ...

Need for full beam time?

Yes, the beam time estimate seems appropriate to achieve the required statistical accuracy.

Feasibility?

Yes, but...

B) Overall opinion

The proposal aims at complementing the spectroscopic information which will allow ... The experiment would add valuable information on ...

C) Rating/shifts: A XXX UBT

Typical Experiment Report

User Project Title	Lifetime of the 0_2^+ state in ^{160}Er
User Project Objectives	<p>The project aims at the measurement of lifetimes in ^{160}Er. The lifetimes of the 0_2^+ state and of the states belonging to the β-band are of special interest. In a recent experiment the $X(E0/E2)$ branching ratios for these states were measured and the present measurement will make possible the determination of the absolute monopole strength of these transitions and thus the mean square charge radii $\langle r^2 \rangle$ of the states of interest, which can be directly compared to the calculations.</p> <p>A second objective of this experiment is the commissioning of a small array of four $2'' \times 2''$ $\text{LaBr}_3(\text{Ce})$ detectors to work together with the ORGAM array and NARVAL DAQ.</p>
User Project Achievements	<p>(1) The experiment was carried out according to the plan. Four $\text{LaBr}_3(\text{Ce})$ detectors were used together with 14 HPGe detectors.</p> <p>(2) $\gamma\gamma\gamma$ – coincidences following the decay of excited states in ^{160}Er were measured with at least two coincidence γ-rays detected by the $\text{LaBr}_3(\text{Ce})$ detectors.</p>
Difficulties incurred	At the beginning of the experiment there were certain difficulties related to the delivery of the correct beam. The team was compensated for the lost beam time.

Evolution of the Beam time (hours) at ALTO

