GRAND ACCELERATEUR NATIONAL D'IONS LOURDS

laboratoire commun CEA/DSM — SPIRAL2 — CNRS/IN2P3

GANIL available beams

GANIL is a heavy ion accelerator delivering **stable** and **secondary radioactive** beams in the energy range between a few **keV/u to 95MeV/u** :

Stable beams from Carbon to Uranium
High energy beams (pilot beam) (4-95 Mev/u)

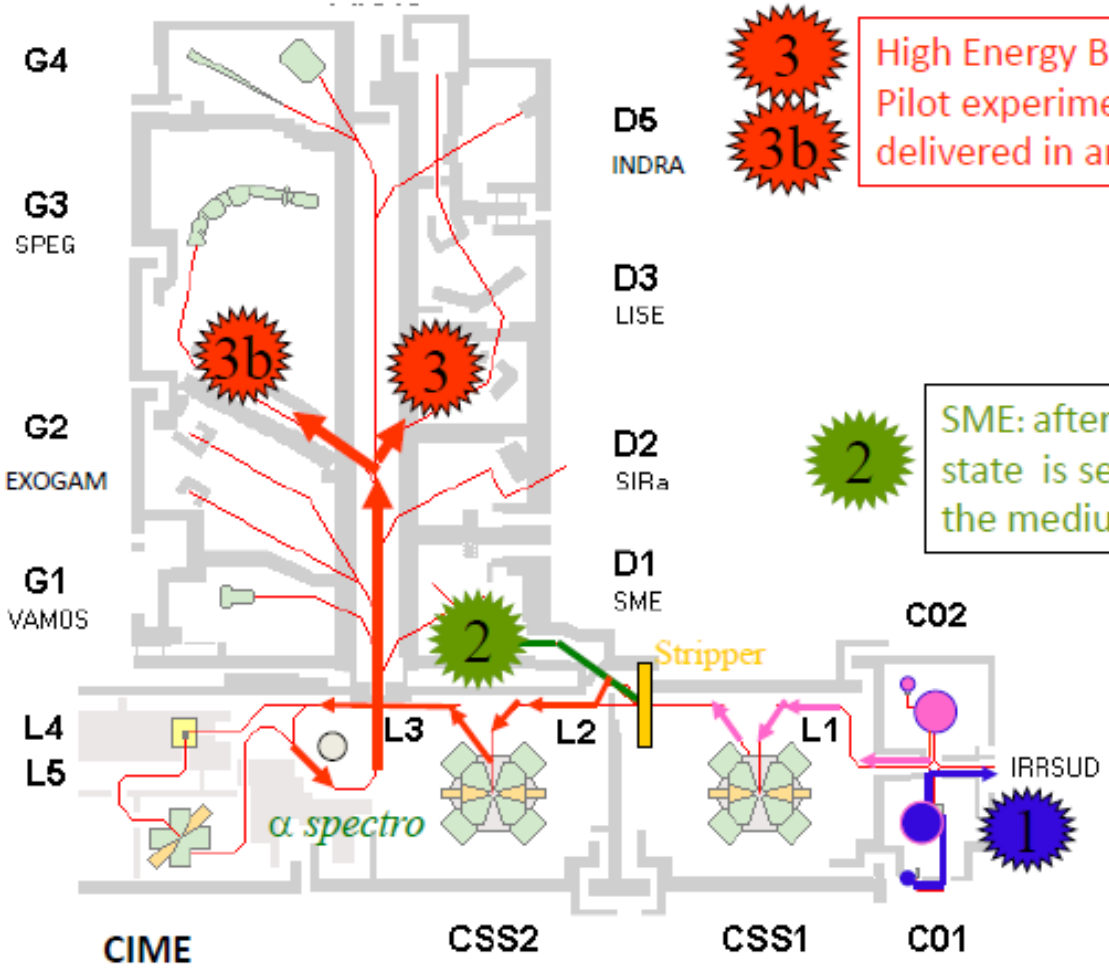
Secondary radioactive beams
- ISOL method @ SPIRAL (He, Ar, Ne, O, Kr isotopes)
  - CIME Post acceleration (3-20 MeV/u)
  - LIRAT (few keV/u)
  - SIRa (test bench for SPIRAL target ion source systems)
- In flight method @ LISE beam line (30-95MeV/u)

Other beams can be also delivered in parallel
- medium (SME 4-20 MeV/u)
- low (IRRSUD 0.3-1 MeV/u)
- very low energy (ARIBE a few keV/u)

Primary Beams:

Ion:	^{12}C	^{36}Ar	^{86}Kr	^{238}U
Energy(AMeV):	95	95	60	24
Int. (pps) :	10^{13}	$3x10^{12}$	$5x10^{11}$	10^{10}

Multi-Beam Operating Mode : an example ...



3 / 3b: High Energy Beam GANIL [24, 95] MeV/u. Pilot experiment + Auxiliary beam delivered in an other room

2: SME: after a stripper, one charge state is sent to the D1 room: the medium energy exit

1: IRRSUD: low energy beam irradiation line

GANIL 2010 (2009)

Beam time available for physics (2009):

High energy: 3615 h 61 experiments (3900 h) (46 experiments)
IRRSUD: 1585 h (1670 h)
SME : 1100 h (2630 h)

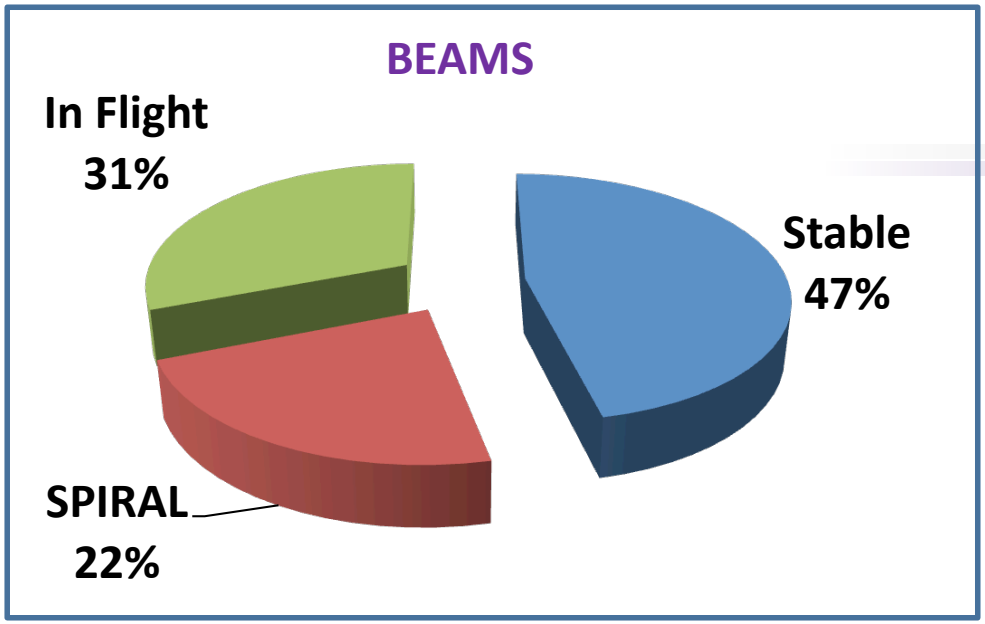
4 running periods :

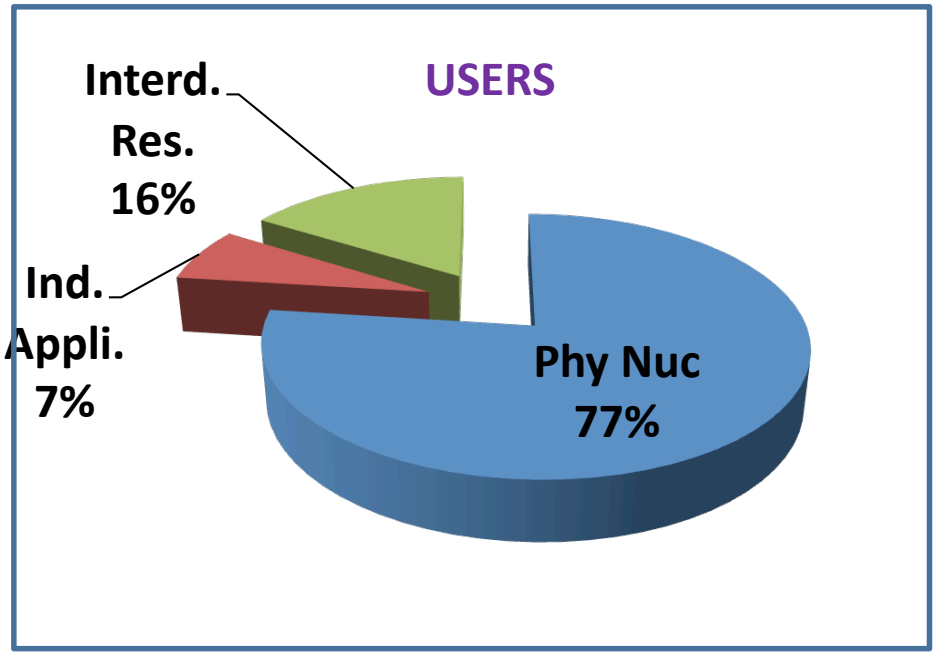
- 25 March- 30 May (23 March – 5 June)
- 7 June – 28 July (15 June – 24 July)
- 30 August – 17 October (30 August – 23 October)
- 25 October – 5 December (5 November – 18 December)

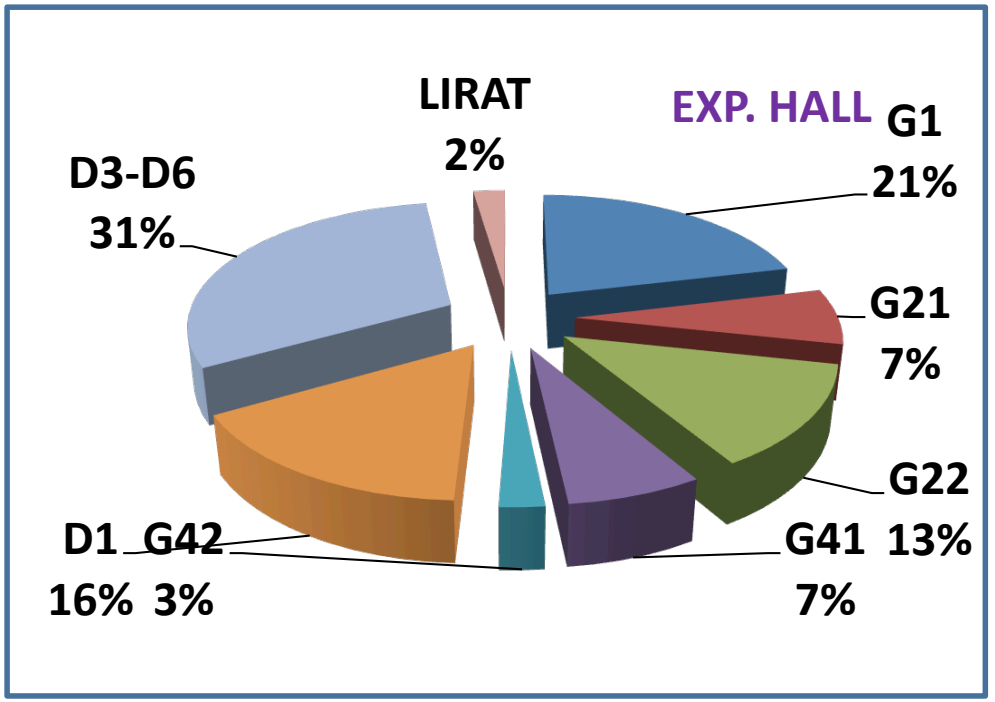
	Nuclear Physics + Industrial applications	Interdisciplinary physics
Number of different users	445	136
Number of labs.	111	46

2010

High Energy







GANIL Beam operation in 2010 (*2009*)

Beams:
Number of stable pilot beams: 42 (45)
Number of SPIRAL beams : 8 (*6*)
IRRSUD beams: 13 (*14*)

Machine availability: 90.3 % (*94 %*)
Beam time achieved/scheduled: 92.2% (*96.9 %*)

Physics advisory Committee(PAC) Nuclear Physics 2010

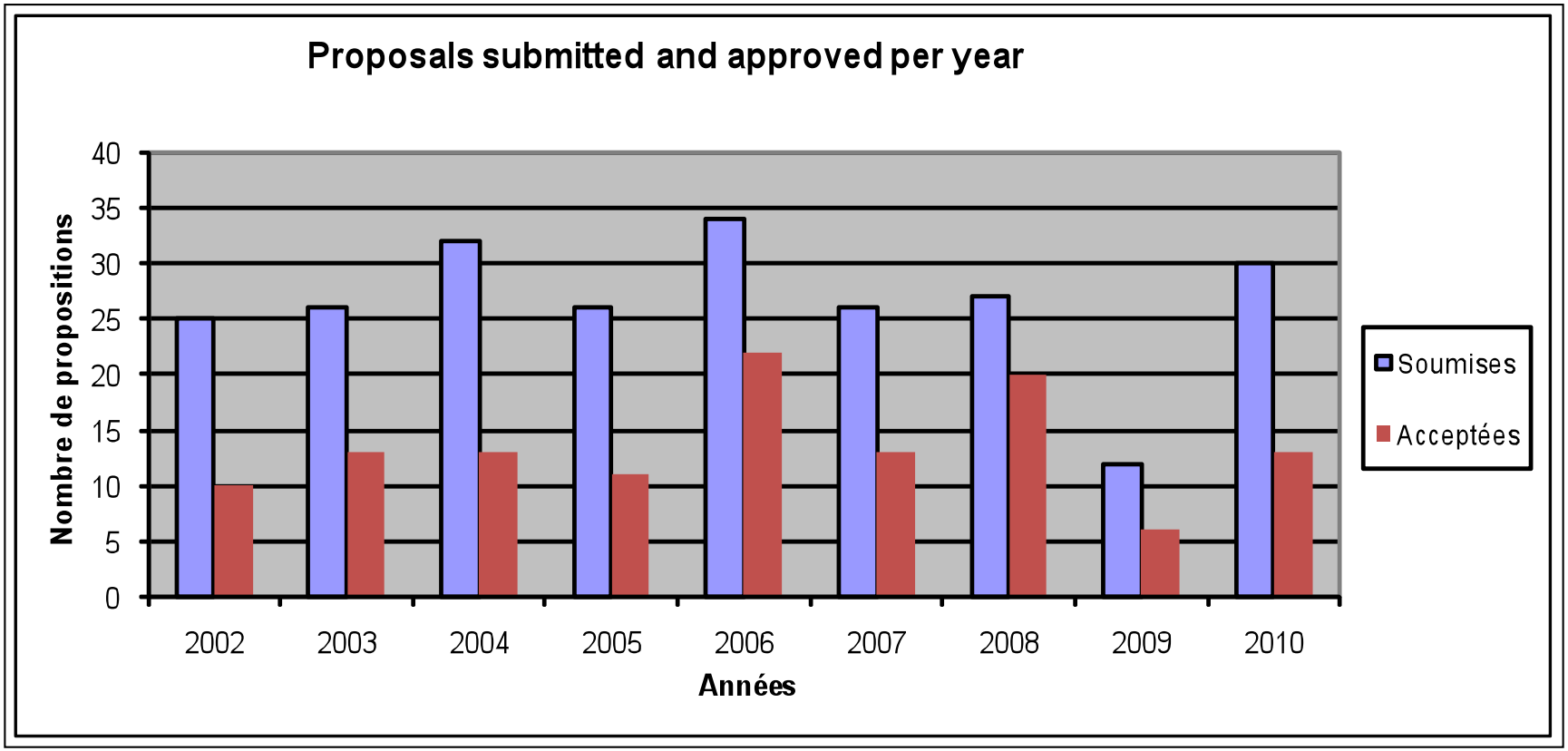
2 meetings in 2010

1er PAC in March 2010 :

- 15 submitted proposals (3184 h)
- 6 approved (1240 h)

2nd PAC in Dec 2010 :

- 15 submitted proposals (2656 h)
- 7 approved proposals (1384 h)


Proposals submitted and approved per year
Nombre de propositions
40
35
30
25
20
15
10
5
0
2002
2003
2004
2005
2006
2007
2008
2009
2010
Années
Soumises
Acceptées

GANIL in 2011

3 running periods in 2011 (4113 h):

18 March	-	15 May	run1
23 May	-	27 July	run2
29 August	-	16 October	run3

Experiments on:

- structure of exotic nuclei
- astrophysics
- fission
- reaction mecanism
- measurements for hadron-therapy
- …

Current Members of the PAC

BLUMENFELD Yorick	ISOLDE CERN
FREER Martin	Univ. Birmingham School of Physics and Astronomy
NOWACKI Frédéric	IPHC Strasbourg
POLLAROLO Giovanni	INFN Torino
REHM Ernst	Argonne National Lab., Chicago
SAKURAI Hiroyoshi	RIKEN-RIBF, Tokyo
ALAMANOS Nicolas	CEA DSM IRFU - CEA-Saclay
BAUGE Eric	CEA - Centre DAM, Bruyères-le-chatel
GADE Alexandra	NSCL - Michigan State University, USA
SCARPACI Jean-Antoine	IPNO, Orsay
SCHADEL Matthias	GSI, Darmstadt
SORLIN Olivier	GANIL, Caen

GANIL –SPIRAL PAC Meeting December 2-3 2010

GANIL-SPIRAL1-SPIRAL2
General information to the community
2011-2012 a period of transition

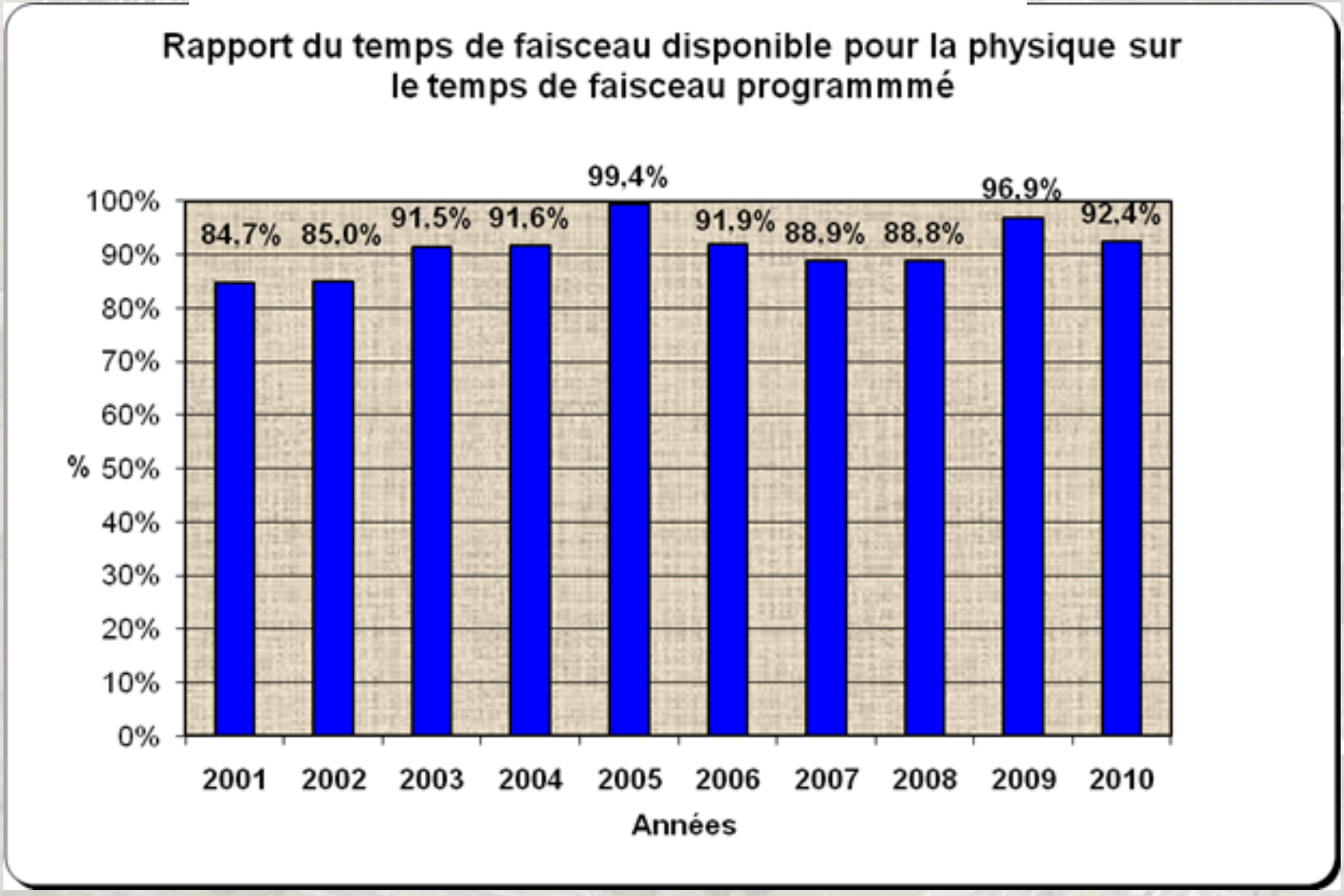
Goals :

a) Maintain a period of high scientific activity in 2011
b) Deliver more than 450 UT in 2011 (March-Oct 2011)

c) GANIL-SPIRAL temporary shutdown scheduled between Oct 2011 and May 2012
d) Restart GANIL-SPIRAL scientific program four months in 2012

e) Commissioning of LINAC beams last trimester of 2012

Ratio of beam time available for physics / Beam time scheduled



As of Nov. 29th 2010

GANIL –SPIRAL PAC Meeting December 2-3 2010

INFORMATION FOR NEXT RUNNING PERIODS in 2011

- 3 periods of running in 2011 (total beam delivery: 514 UTs):

March 18	– May 15	run 1
May 23	- July 27	run 2
August 29	– October 16	run3

-PAC Dec 2010: 15 propositions (14 proposals + 1 add) submitted (332 UTs)

-Time allocated by the PAC ≈ 150 UTs

- Experiments from PAC Dec 2010 to be scheduled in 2011 (run3):

Priority A (max 60 Uts)

- Backlog (after completion of all runs of 2010): 19 experiments (415 UTs)

-Experiments from the backlog that will be scheduled in 2011:

-around 280 UTs

-Experiments from the backlog that can NOT be scheduled in 2011:

135 UTs

CONCLUSION: end of 2011 the backlog will be 135+(150-60)= 225 UTS (corresponding to 15 experiments, 6-8 months)

GANIL –SPIRAL PAC Meeting December 2-3 2010

Next call for proposals and next GANIL PAC
in about One year, decision to be made
in connection with SPIRAL2 start.

PAC in Nov 2011 for a 4 months running period 2012
(received 16 proposals)

GANIL PAC PROGRAM

Thursday 2nd December 2010			
Time	Expt.	SpokesPerson(s)	Title
8:10-8:30		CLOSED SESSION	
8:35		S. Gales	Welcome GANIL Management
8:45	E622S	G.F. Grinyer, J.-C. Thomas	Nuclear β decay and fundamental physics at SPIRAL: High-precision ft value for the superallowed emitter 18Ne
9:00	E620S	M. Caamaño, T. Roger	Precise Study of the 7H Resonance
9:15	E618S	E. Liénard	Measurement of the beta-neutrino angular correlation coefficient in 35Ar decay
9:30	E617	S. Lukyanov, Yu. Penionzhkevich	Cluster structure of 8B via incomplete fusion near the Coulomb Barrier
9:45	E628	B. Fernandez-Dominguez, W. N. Catford	Spectroscopy of 17C: Location of the 0d3/2 strength in n-rich carbon isotopes
10:00	E619	Y. Watanabe, S. Jeong	Production of Heavy Neutron-Rich Nuclei by Multinucleon Transfer Reactions of 136Xe+198Pt
10:15	E625	V.Zagrebaev, E.Kozulin, E. Vardaci	Production of new heavy neutron-rich nuclei located along the closed neutron shell N=126 in the reaction 136Xe + 208Pb
10:30-11:00		COFFEE BREAK	
11:00	E615	S.M. Lenzi, F. Recchia	Isospin symmetry breaking in analog rotational bands: 23Mg and 23Na
11:15	E623	B. Cederwall, R. Wadsworth, G. de France	Search for isoscalar spin-aligned coupling scheme in 96Cd
11:30	E627	A. Gadea, G. de France	Mirror Energy Differences in T=1/2 pairs at the Valence Maximum in the pfg-Shell: the 77Y case
11:45	E624	J.M. Daugas, G.Georgiev, M.Hass	g-factor measurement of the 69Ni and 71Cu isomers – exploring the proton-neutron interaction
12:00	E626	T.J. Mertzimekis, G. Georgiev, A.E. Stuchbery	Magnetic-moment measurement of the first excited 2+ states in 74Kr and 76Kr
12:15	E616	E. Clément, I. Celikovic	Shape coexistence at south of 68Ni : Coulomb excitation of 63,65,67Co
12:30	E621	F. Delaunay	Detector development tests for new neutron arrays at SPIRAL2
12:45	E629	C. Stodel, A. Wieloch	Test of a new experimental method to detect very heavy and super heavy nuclei
13:00	E568a	S. Grévy D. Sohler L. Cacères	Coulomb excitation of n-rich nuclei around N=28
14:15-19:30		CLOSED SESSION	
		Friday 3rd December 2010	

Info to help you to answer the ENSAR questions

-what kind of experimental proposals did you get?
(cf list of the previous PAC)

-what are the criteria for approval?
(you can mention that there is a TAC (technical advisory committee 1 month before and that you and the spokespersons have their recommendation)
The PAC judge the scientific pertinence of the proposal

-what is the ranking method?
-SecreteVote between 0 and 5.

-did you have to deal with backlogs?
(see info given by Sydney before the PAC)

-can your lab use the equipment of another lab? vice versa?
Yes , neutron wall, diamant, many other detectors, … agata …

-any other important point discussed during the PAC meeting
Can an exp be performed elsewhere ?ral report e part of o
Yes this can be part of the oral report from GANIL PAC when both for Acc performances and/or instrumentation another facility is most suited…..
We expect this meeting ot discuss this particular issue also