



# EXPERIMENTAL AND USERS PROGRAMS

# LABORATOIRE LÉON BRILLOUIN

We present in this section the main facts and figures related to beam statistics and users activity of the Orphée-LLB facility in 2005-2006.

### Beam statistics 2005-2006:

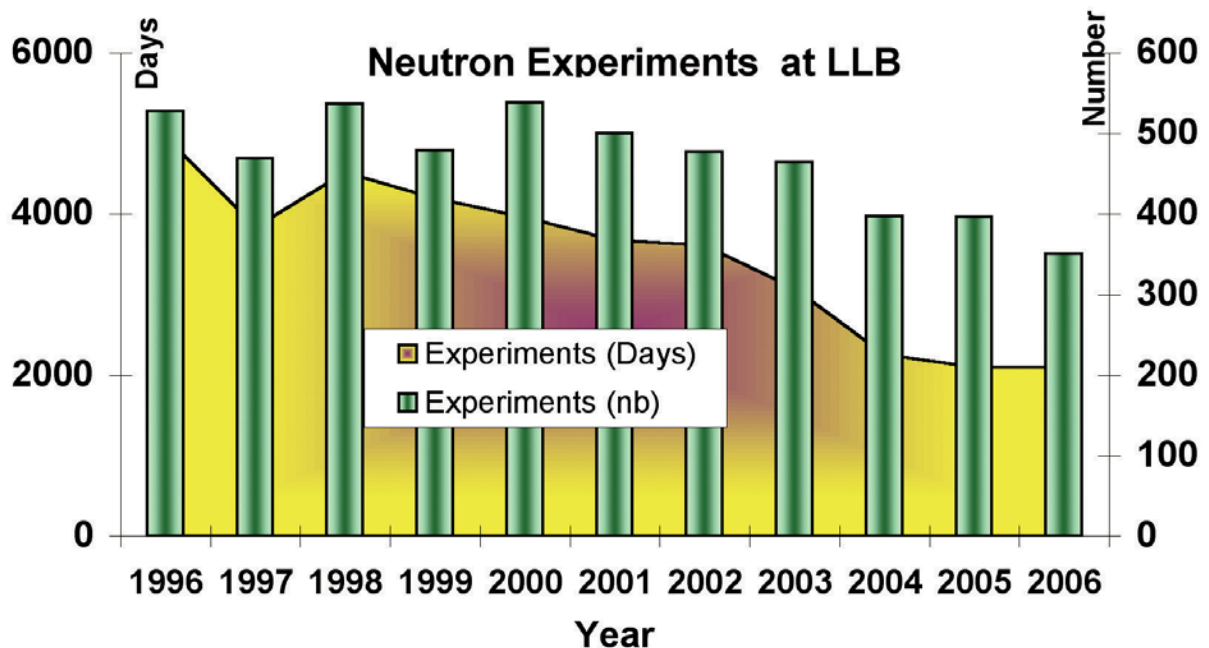
Table 1 summarizes the LLB-Orphée performance during the last 8 years. The first line shows the operation days established by the Associates Agreement (CNRS and CEA). Because of severe budget cuts, a significant reduction of the operation days took place in 2004 and 2005. Fortunately, from 2006, the situation is different: The new CEA-CNRS Agreement represents a return to normal working conditions (a minimum of 180 days per year). This agreement was effective on January 2006 for 5 years.

The second and third lines of table 1 summarize the real number of working days (FPED, Full Power

Year	1999	2000	2001	2002	2003	2004	2005	2006
CEA CNRS Agreement	210	210	180	180	180	114	114	180
Reactor Days (EFPD)	205	213	186	183	163	118	112	123
% Availability	97,6	101,4	103,3	101,7	90,6	103,5	98,2	68,3

Equivalent Days) and the availability of the facility. For 2006, the FPED will be 123 instead of 180 because a technical breakdown occurred in the Orphée reactor after the long summer shutdown.

Table 1



Operation of the LLB-Orphée facility for the last 8 years.

Figure 1

Number of experiments (green bars and right side scale) and experiments days in the LLB spectrometers (yellow curve and left side scale) performed at the facility during the last 10 years. Both curves show the same evolution than the FPED of table 1.

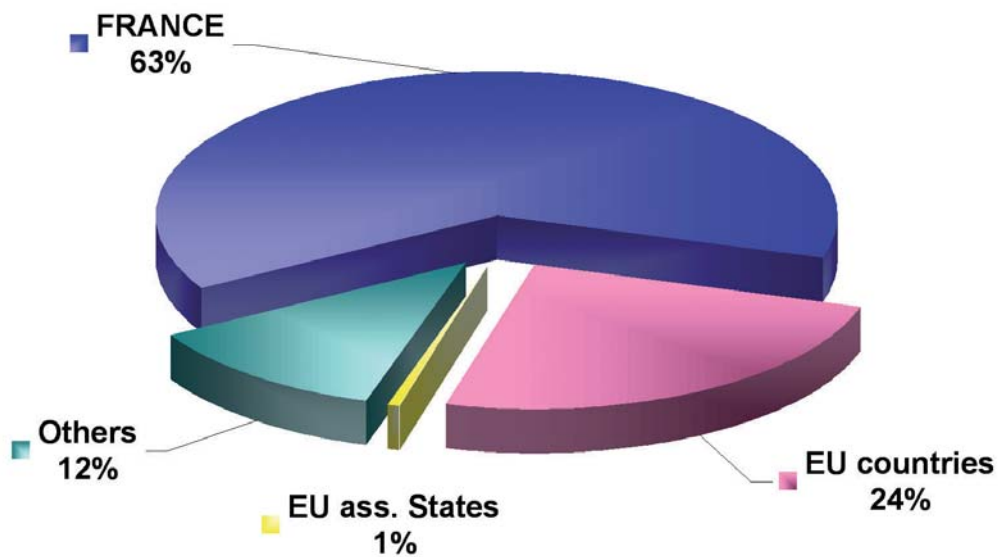
## EXPERIMENTAL AND USERS PROGRAMS

## Beam time allocation

Proposals for experiments are selected through a peer review. Selection Committees (SC) are composed by high level scientists from France and European Countries. Details are given in the subsection "Selection Committees". The SC meet twice a year (typically spring and fall). The composition of the SC which will take place the 4th and 5th December 2006, is given at the end of the section.

The following series of figures summarizes the statistics of the beamtime allocation at the LLB corresponding to the four SC previous meetings (Spring 2005 - Fall 2005 - Spring 2006 - Fall 2006). Figure 2 and table 2 summarize the distribution amongst the different countries of beamtime allocat-

### Nationalities of the beamtime allocation at LLB in 2005-2006



ed by the 4 SC meetings from Spring 2005 to Fall 2006.

Figure 2

Beam time allocated at the LLB-Orphée facility by the four SC meetings from Spring 2005 to Fall 2006, as a function of the National affiliation of the users involved in the accepted proposal.

Country	number of proposals 2005-2006	number of experiments accepted 2005-2006	beamtime requested (days)	beamtime allocated (days)	beam time requested (%)	beamtime allocated (%)
FRANCE	620	514	4811	2794,5	59,9%	63,1%
<b>FRANCE</b>	<b>620</b>	<b>514</b>	<b>4811</b>	<b>2794,5</b>	<b>59,9%</b>	<b>63,1%</b>
Germany	100	75	737	434,5	9,2%	9,8%
United Kingdom	35	27	242	135	3,0%	3,0%
Poland	32	18	266	130	3,3%	2,9%
Italy	45	29	249,5	123	3,1%	2,8%
Spain	13	10	90	50	1,1%	1,1%
Others (1)	71	46	463	207	5,8%	4,7%
<b>EU countries</b>	<b>296</b>	<b>205</b>	<b>2047,5</b>	<b>1079,5</b>	<b>25,5%</b>	<b>24,4%</b>
Israel	4	4	28	22	0,3%	0,5%
Others (2)	3	2	26	12	0,3%	0,3%
<b>EU ass. States</b>	<b>7</b>	<b>6</b>	<b>54</b>	<b>34</b>	<b>0,7%</b>	<b>0,8%</b>
Russia	31	24	288	155	3,6%	3,5%
United States	36	18	378	124	4,7%	2,8%
Japan	13	13	107	89	1,3%	2,0%
Australia	13	9	103	56	1,3%	1,3%
Others (3)	32	19	247	99,5	3,1%	2,2%
<b>Others</b>	<b>125</b>	<b>83</b>	<b>1123</b>	<b>523,5</b>	<b>14,0%</b>	<b>11,8%</b>
<b>TOTAL</b>	<b>1048</b>	<b>808</b>	<b>8035,5</b>	<b>4431,5</b>	<b>100%</b>	<b>100%</b>

(1) Belgium, Hungary, Sweden, Czech Rep., Austria, Greece, Portugal, Slovakia, Slovenia, Bulgaria, The Netherlands, Denmark, Finland, and Romania

(2) Switzerland and Norway

(3) Tunisia, China, Canada, Algeria, India, Ukraine, Brazil and Morocco

Table 2

Distribution amongst the different countries of beamtime requested and allocated by the 4 SC meetings from Spring 2005 to Fall 2006. The countries with the highest allocations are highlighted.

The LLB is the French National Facility. Consequently, the most important part of the allocated experiments rises from French teams, coming from all over the country. As in the precedent periods, the French experiments account for nearly two-thirds (2/3) of the total beam time allocated.

The research teams of European Union and EU associated states have benefitted from more than one fourth (1/4) of the total allocated beam time. A large part of the expenses of these groups (beam time costs and travel expenses) have been supported by the ACCESS program of the EU-FP6 (see below). Details of the team national affiliations are given in Figure 3. Nearly half of the European beamtime goes to German experiments, which is the result of long term collaborations and CRG agreements. 10% of the allocated beam time has been given to countries out of the EU area, mainly United States and Russia. A detailed analysis of the team national affiliations is given in Figure 4.

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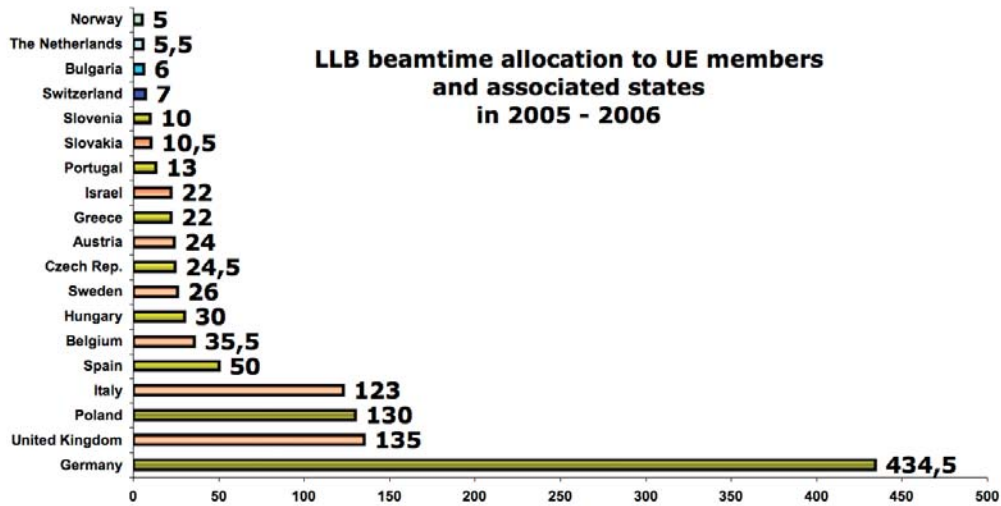
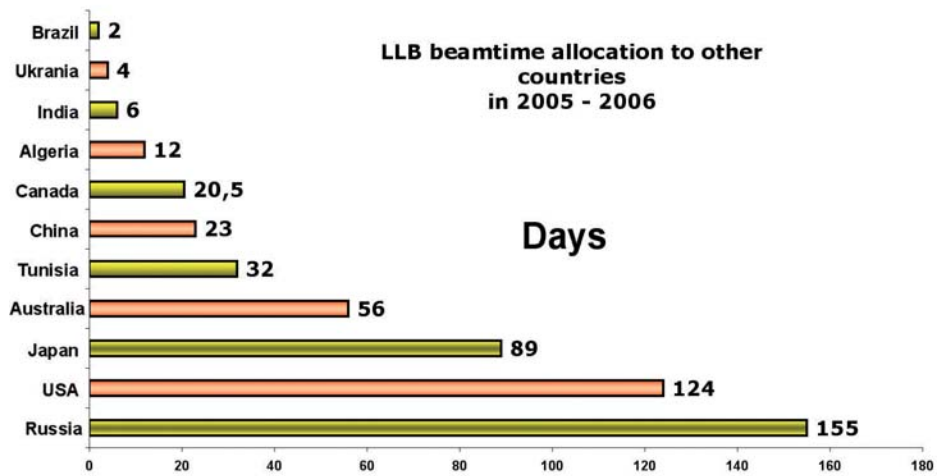


Figure 3

Beam time allocated in the period Spring 2005–Fall 2006 to UE members and associated states as function of the national affi-



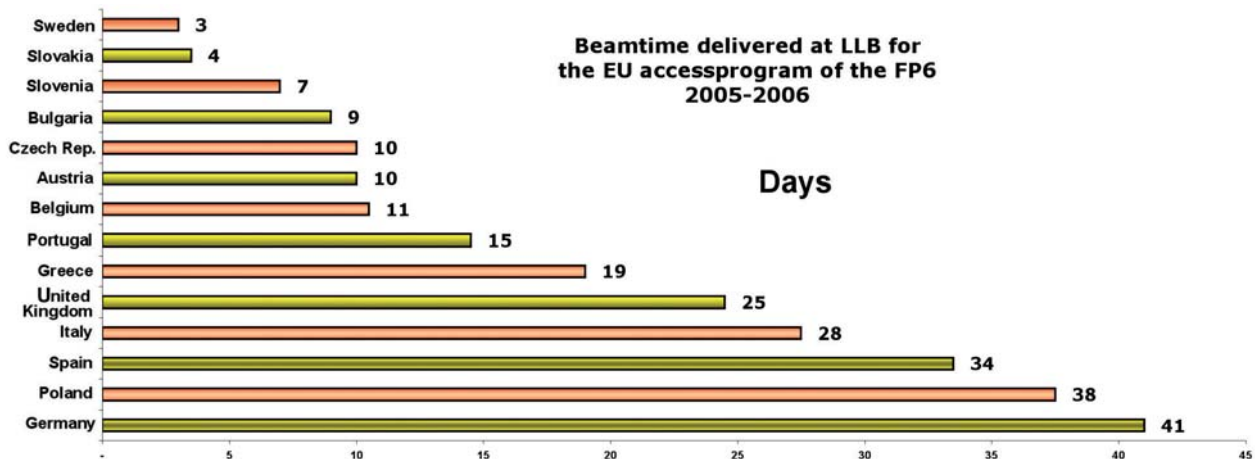
liations of the teams.

Figure 4

Beam time allocated in the period Spring 2005–Fall 2006 to other countries as function of the national affiliations of the teams.

## The ACCESS program at the LLB

The LLB successfully participates in the Transnational Access of European Users to Large Scale Facilities in the Neutron-Muon Integrated Infrastructure Initiative (NMI<sup>3</sup>, see detail in the web page <http://www.neutron-eu.net>). The LLB is particularly keen to attract new user groups from European Countries, which can apply for beamtime via the normal LLB proposal mechanism. Thanks to the Access support, the LLB funds the travel and subsistence expenses form up to two researchers of an



accepted proposal. Figure 5 gives details about the national affiliations of the teams participating in the access program in 2005 and 2006.

Figure 5

Beam time (in days) delivered by the LLB-Orphée facility in 2005 and 2006 in the framework of the Transnational Access Program supported by the European FP6 scheme, as a function of the nationality of the experimentalist invited by the LLB.

## The Selection Committees

The Selection Committee of the LLB is composed by high level scientists from France and European Countries. The meeting takes place twice a year (typically spring and fall) to review all the proposals submitted to the facility based on scientific merit and timeliness. Four subcommittees have been set up in the following research areas:

- Section A: Physical Chemistry and Biology
- Section B: Structural Studies and Phase Transitions
- Section C: Magnetism and Superconductivity
- Section D: Material Science and Disordered Systems.

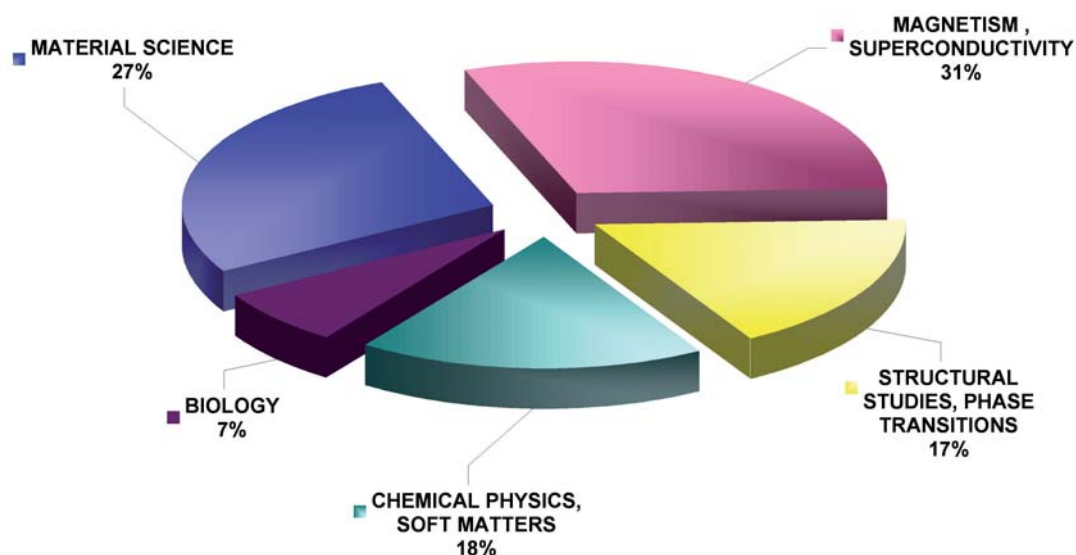
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The LLB facility Scientific Committee Membership (Fall 2006 meeting) is given in table 3. The list of the LLB instruments scheduled of external users are given at the end of the section.

The relative importance of these 4 committees is depicted in Figure 6. We remark the predominance of section C "Magnetism and Superconductivity" (31%), followed by section A "Physical Chemistry and Biology" (25%), section D "Material Science and Disordered Systems" (27%) and section B "Structural Studies and Phase Transitions" (17%). In figures 7, 8, 9, 10 and 11 the research sub-fields contained in main research areas are detailed.

More information on applications for beamtime and deadlines is given in real time on the LLB web site.

### Scientific domains of the beamline allocation at LLB in 2005-2006



<http://www-llb.cea.fr>

Figure 6

Repartition of the beam time allowed amongst the 4 subcommittees with the corresponding percentage. (Spring 2005–Fall 2006)



## Chemical physics, soft matter beamtime allocated in 2005-2006

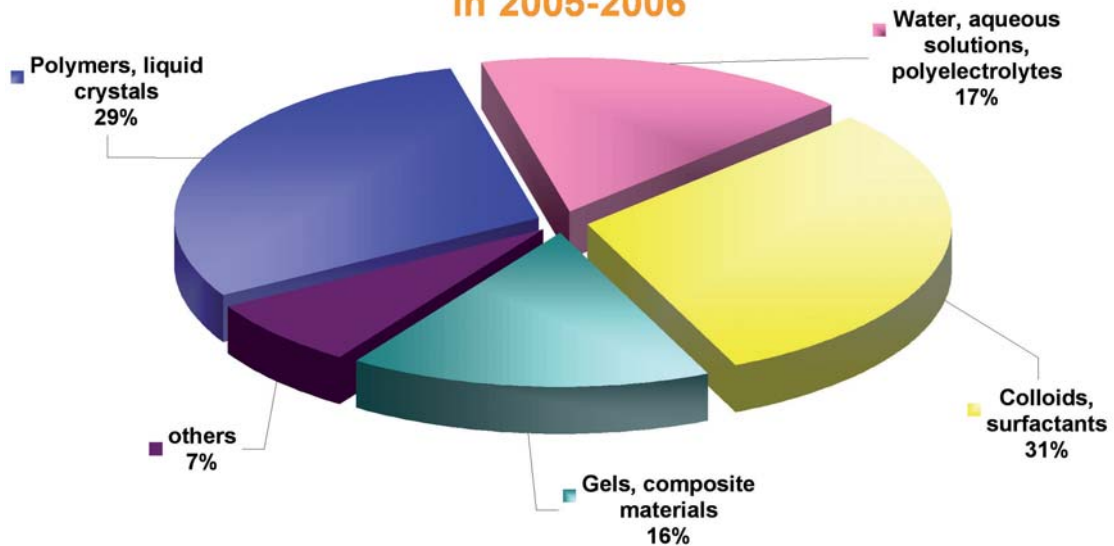


Figure 7

Beam time repartition detailed by sub-fields in the area of Chemical Physics and Soft Matter (Selection Committees from Spring 2005 to Fall 2006).

## Biology : beamtime allocated in 2005-2006

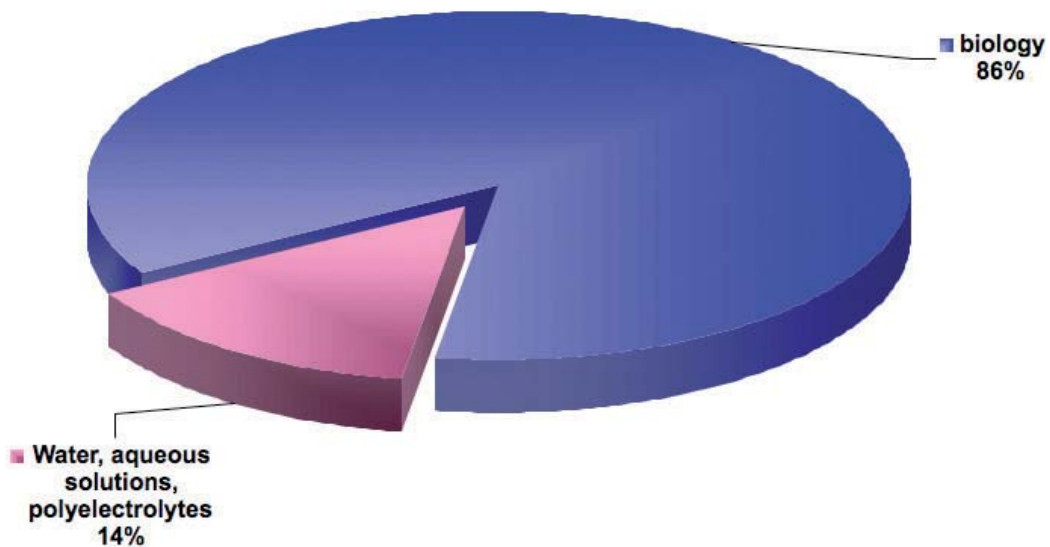


Figure 8

Beam time repartition detailed by sub-fields in the area of Biology (Selection Committees from Spring 2005 to Fall 2006).



### Structural studies, phase transition : beamtime allocated in 2005-2006

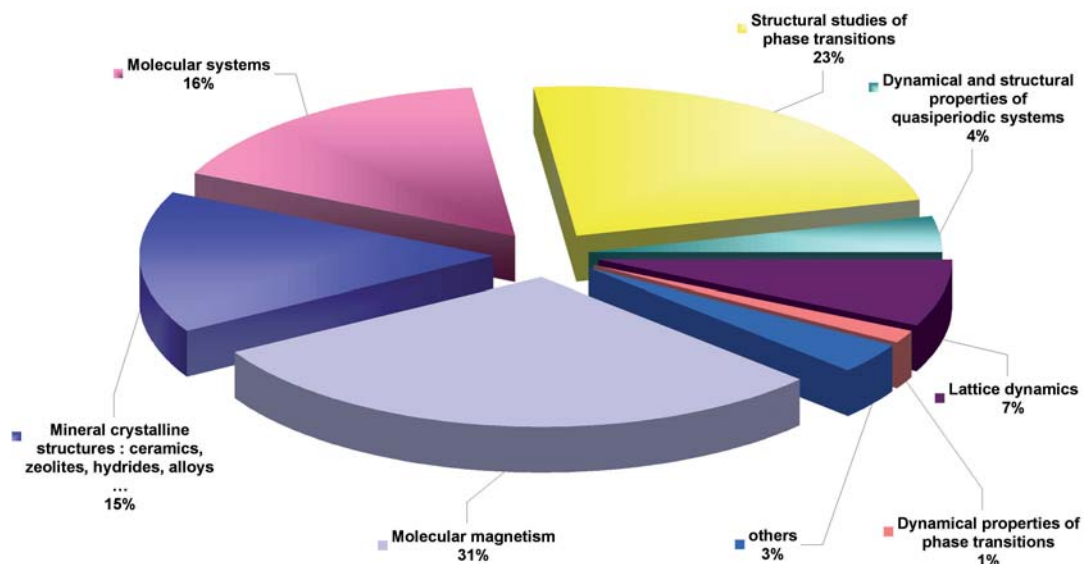


Figure 9

Beam time repartition detailed by sub-fields in the area of Structural Studies and Phase Transitions (Selection Committees from Spring 2005 to Fall 2006).

### Magnetism, superconductivity : beamtime allocated in 2005-2006

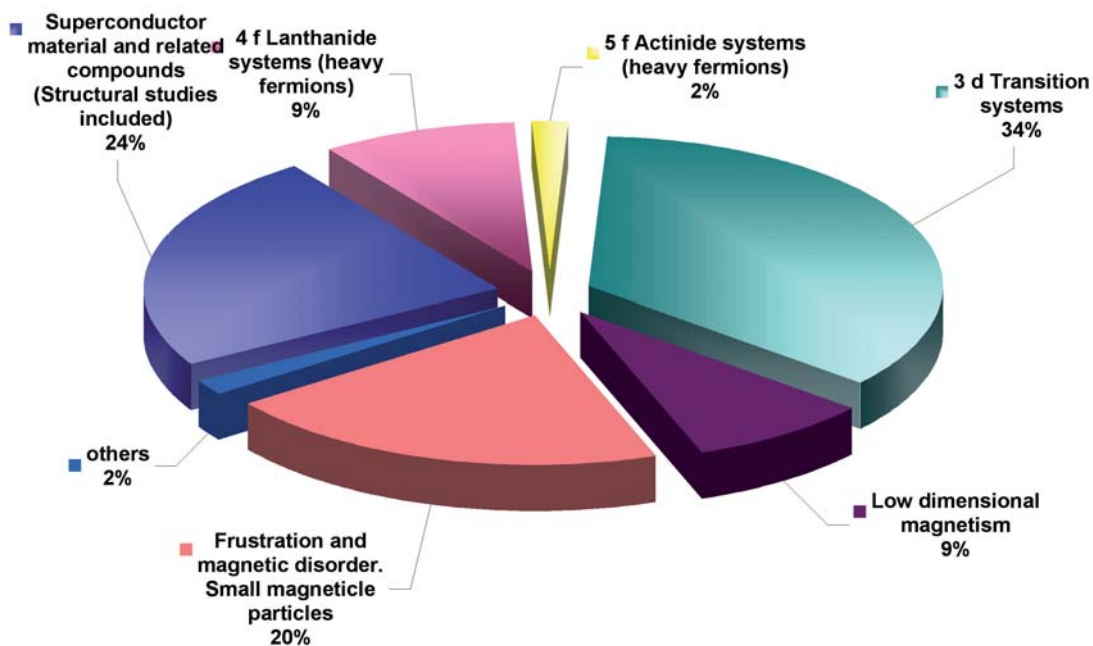


Figure 10

Beam time repartition detailed by sub-fields in the area of Magnetism and Supraconductivity (Selection Committees from Spring

## Material Science : beamtime allocated in 2005-2006

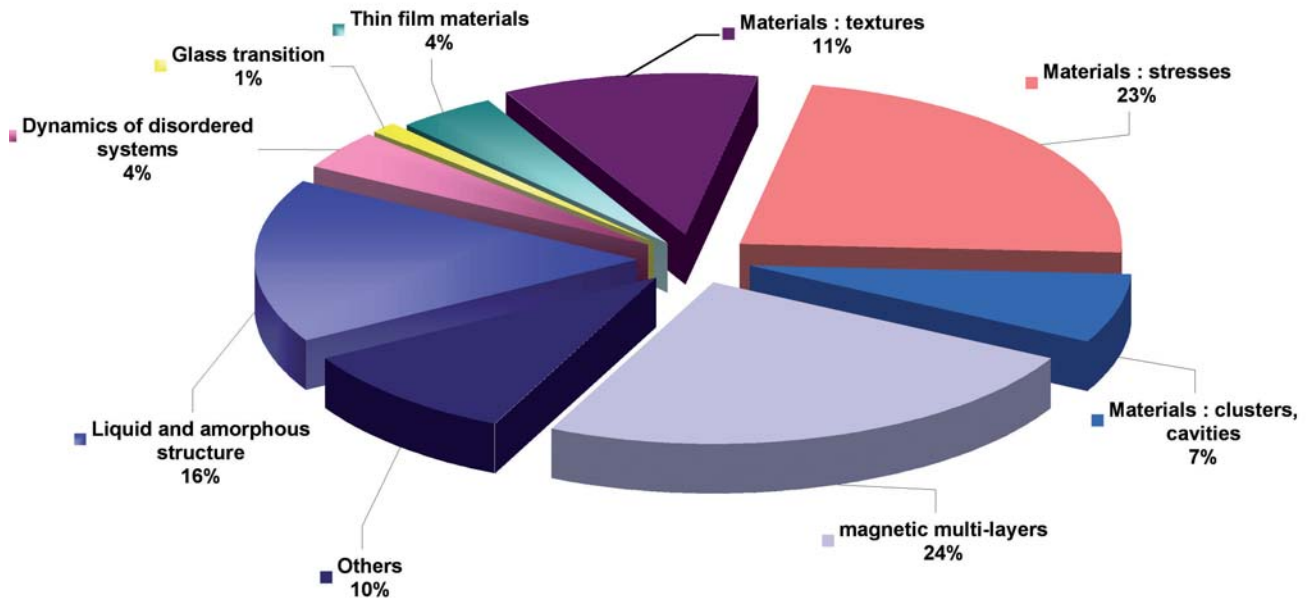


Figure 11

Beam time repartition detailed by sub-fields in the area of Material Science and Disordered Systems (Selection Committees from Spring 2005 to Fall 2006).

## EXPERIMENTAL AND USERS PROGRAMS

## Comités de Sélection - LLB Session Automne 2006

COMITE A : Physico-Chimie, Biologie Organisateurs : S. Combet, F. Cousin		
Représentants LLB	Représentants français	Représentants européens
J. Jestin J.M. Zanotti	O. Diat [Président] CEA/Grenoble P. Fontaine SOLEIL I. Grillo ILL S. Lecommandoux LCPO, Pessac	M. Geoghegan Université de Sheffield T. Hellweg Technische Univ. Berlin P. Mariani Université
COMITE B : Etudes Structurales, Transitions de Phase Organisateurs : F. Bourée, D. Petitgrand		
Représentants LLB	Représentants français	Représentants européens
J.-M. Kiat, ECP H. Moudden	N. Hansen Université Nancy M.H. Lemée-Cailleau ILL G. Rousse Université Paris	F. Frey [Président] Université Münich D. Reznik KFK, Allemagne
COMITE C : Magnétisme, Supraconductivité Organisateurs : P. Bourges, G. Chaboussant		
Représentants LLB	Représentants français	Représentants européens
B. Gillon S. Petit	M. d'Astuto Université Paris VI K. Dumesnil Université Nancy I E. Janod IMN, Nantes C. Martin CRISMAT, Caen	L. Chapon ISIS M. Enderle ILL J.-L. Garcia-Munoz [Pdt] I C M A B , Barcelone E. Kentzinger Jülich
COMITE D : Systèmes désordonnés, Matériaux Organisateurs : A. Goujon, M.H. Mathon		
Représentants LLB	Représentants français	Représentants européens
B. Beuneu	J.L. Bechade CEA/Saclay D. Morineau Université Rennes P. Vajda Ecole	I. Cabaco-Fialho [Pdte] Université de Lisbonne H.G. Priesmeyer Université de Kiel

Table 3

LLB Facility Panel Membership. The four sub-committees meet twice a year to review all proposals submitted to the facility based on scientific merit and timeliness

