

# Report on TransNational Activities at ALTO

## TNA07 – WP20

### **Description of the publicity concerning the new opportunities for access**

A dedicated Users Guide on the ALTO Web-site exists to publicise the opportunities for access: [http://ipnweb.in2p3.fr/tandem-alto/index\\_E.html](http://ipnweb.in2p3.fr/tandem-alto/index_E.html)

This Web-site details the facilities available, the laboratory infrastructure and services, the selection process and a call for proposals.

In the main ALTO page [http://ipnweb.in2p3.fr/tandem-alto/index\\_E.html](http://ipnweb.in2p3.fr/tandem-alto/index_E.html) the application for financial assistance for Transnational Access is described, i.e.:

- Financial support available
- Who can apply
- How to apply
- The Application Form

### **Description of the selection procedure**

The selection of users by the PAC (Programme Advisory Committee) is made only on the scientific merit of the proposals submitted. The proposals are reviewed independently of their country of origin. Experiments are evaluated and awarded a number of 8-hour shifts of beam time, according to the number requested and the number deemed suitable by the PAC. Once the list of approved experiments has been determined by the PAC, two members of the PAC (the chairman and the scientific coordinator) together with the responsible of the TNA are asked to choose, from the approved experiments, those which are entitled to financial support through the TA activity.

During the reporting period, two PAC for nuclear physics were held at Orsay, on 10/11 January 2011 and on 8/9 March 2012. 39 Proposals were submitted on which 17 were eligible to financial support, but only 30 proposals were accepted on which 16 were eligible.

In Annex 1, there is the list of the Selection Panel members for the reporting period as well as the number of eligible user-projects submitted to the panel during the reporting period and the number of the selected ones.

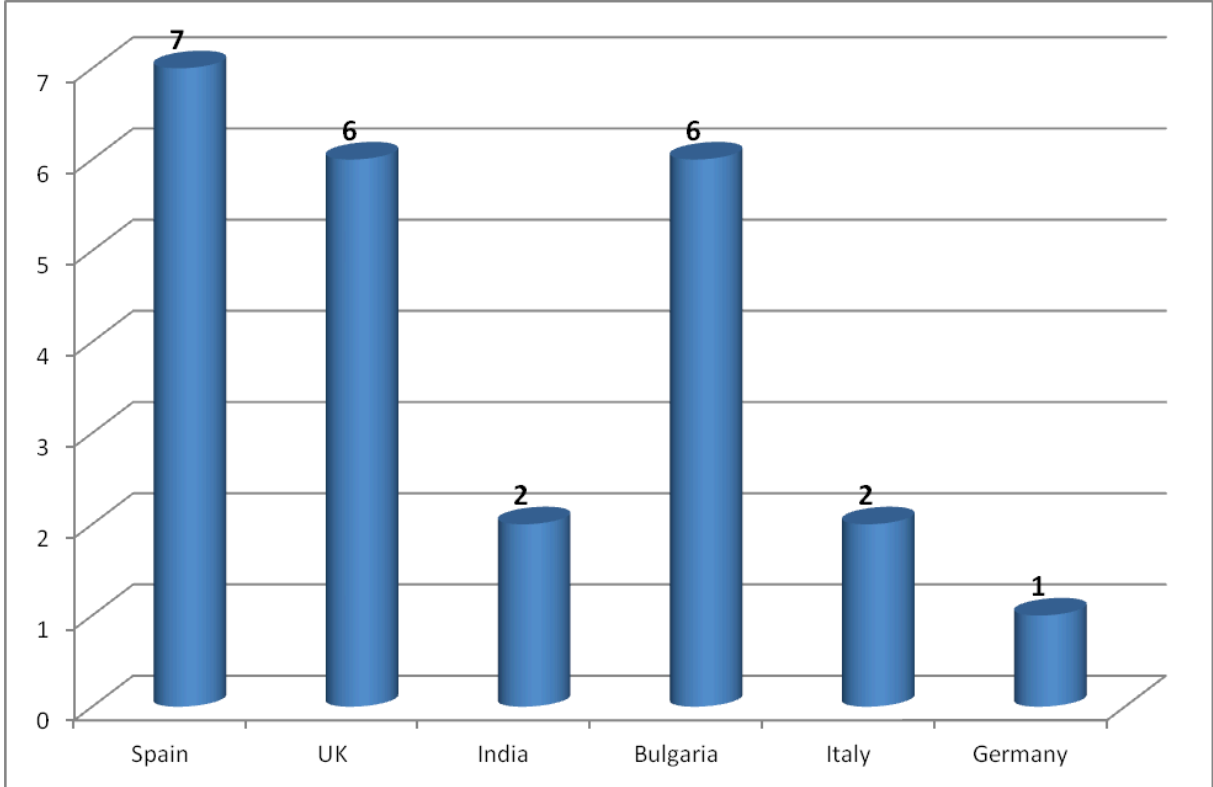
### **Transnational Access activity**

During the reporting period

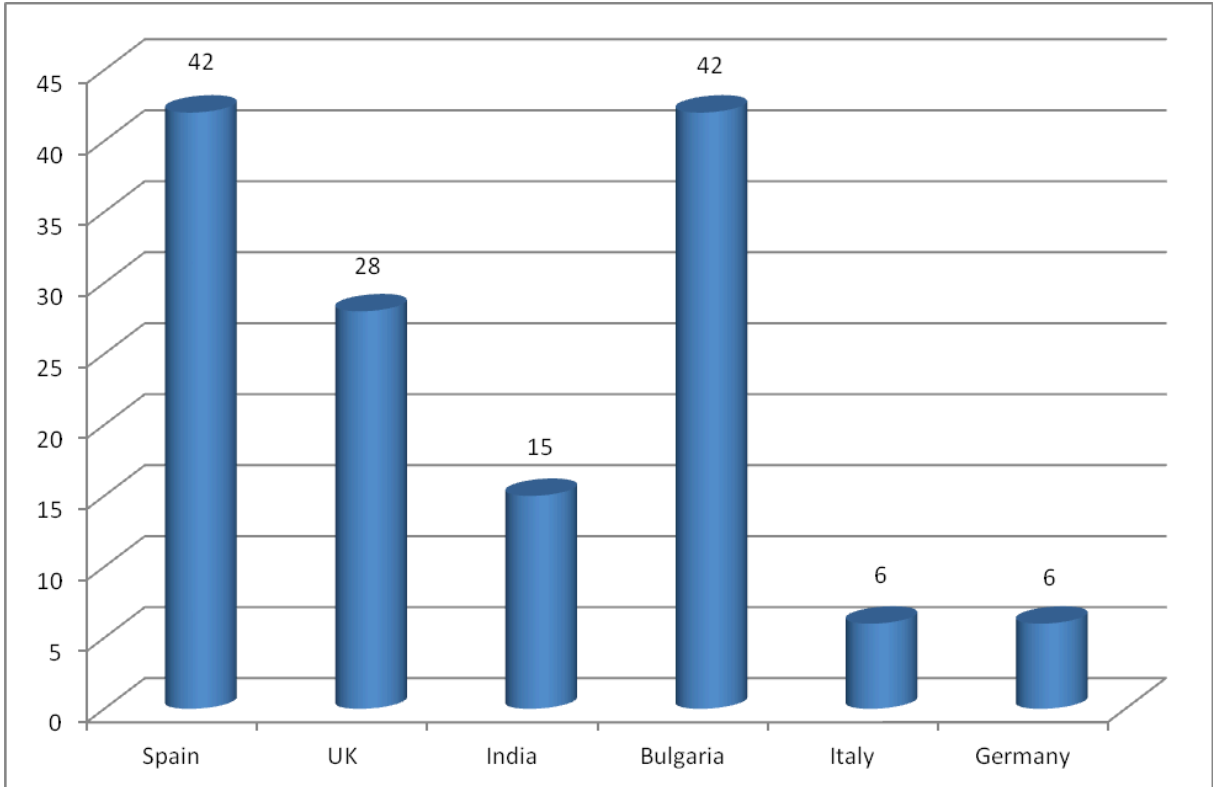
- 5392 experimental hours were delivered in total
- 912 experimental hours were offered under the proposal
- 24 users were supported by the TNA
- They spent 139 person-days at ALTO
- 87% were new users

The scientific areas of the experiments performed at ALTO are as follows: nuclear structure and spectroscopy of exotic nuclei; fusion, fission of heavy nuclei; nuclear

astrophysics; and test of fundamental interactions. Among others, the goals are to understand the structures of the nuclei, their shape and shell evolutions from stable to drip line nuclei, to measure the properties of nuclear matter and to evaluate the possible astrophysical implications.



Individual Users by Home Institution Country



Duration of stay by Home Institution country

### **Scientific output of the users at the facilities**

Only one publication have been published yet from the complex experiments performed at ALTO during the reporting period (see Annex 4 of the Data Base).

In 2010-2011, some unique results have been obtained.

- Destruction of  $^{26}\text{Al}$  in massive stars
- Study of resonant states in  $^{10}\text{C}$ ,  $^9\text{Be}$  and  $^{10}\text{B}$  and their impact on the cosmological lithium problem
- First tests of the SPIRAL2/ GASPARD detector
- Search for isomeric states in the  $N=80$  nuclei,  $^{136}\text{Ba}$ ,  $^{138}\text{Ce}$  and  $^{142}\text{Sm}$
- Measurements of the  $^{26}\text{Mg}(p,n)^{26}\text{Al}$  cross section of astrophysical interest
- Lifetime of the  $0^+2$  state in  $^{160}\text{Er}$

### **User meetings**

The chairman of the User Group has been designed : Georgy Georgiev (CSNSM, Orsay, France)

A meeting of the users – “Workshop ALTO”- will be organised in 2013.

The purpose of the Workshop will be to review and discuss the research carried out at ALTO and the related activities carried out at similar facilities around the world.

The Colloque will cover the range of topics addressed at ALTO

- Nuclear structure
- Reaction mechanism
- Nuclear astrophysics
- Interaction of ions with matter
- Interdisciplinary research

## Annexes

### Annex 1 – Composition of the Users Selection Panel

PAC :

#### **Chairman of the PAC :**

Richard F. CASTEN – WNSL, Yale University – New Haven - USA –  
richard.casten@yale.edu

#### **Tandem-ALTO Scientific coordinator :**

David VERNEY – IPN Orsay – verney@ipno.in2p3.fr

#### **Facility chief engineer :**

Abdelhakim SAÏD - IPN Orsay : said@ipno.in2p3.fr

#### **Member :**

Emmanuel BALANZAT (CIMAP – Caen) : balanzat@ganil.fr

#### **Member :**

D. BALABANSKI (Sofia – Bulgarie) : balabanski@inrne.bas.bg

#### **Member :**

Stéphane GREVY (CENBG) : grevy@cenbg.in2p3.fr

#### **Member :**

Elias KHAN (IPNO) : khan@ipno.in2p3.fr

#### **Member :**

W. KORTEN (SPOHN-IRFU-CEA) : wolfram.korten@cea.fr

#### **Member :**

Berta RUBIO (Sevilla-Spain) : Berta.Rubio@ific.uv.es

#### **Member :**

Jean-Charles THOMAS (Ganil, Caen) : thomasjc@ganil.fr

#### **Member :**

Aurora TUMINO (LNS-INFN-Catania-Italia) : tumino@lns.infn.it

#### **Member :**

C. TRAUTMANN (GSI- Allemagne) : C.Trautmann@gsi.de

### Annex 2 – List of User-Projects

#### **I-SI-12 :**

Test of the GASPARD detector

Spokesperson : Jose Antonio Duenas (Huelva, Spain)

#### **N-SI-41 :**

Lifetime of the 0+2 state in 160Er

Spokesperson : Dimiter Balabanski (Sofia, Bulgaria)

#### **N-SI-38**

Study of resonant states in 10C, 9B and 10B and their impact on the cosmological lithium problem

Spokesperson : T. Davinson (Edinburgh, UK)

**N-SI-40**

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

Spokesperson (K. Spohr, Paisley, UK)

**N-SI-39**

Search for isomeric states in N=80 nuclei

Spokesperson J. M. Regis (Germany)

**N-SI-39b**

Search for isomeric states in N=80 nuclei

Spokesperson J. M. Regis (Germany)

**I-SI-12b**

Test of Hyde

Spokesperson : Jose Antonio Duenas (Huelva, Spain)

**N-SI-36**

Destruction of  $^{26}\text{Al}$  in massive stars

Spokesperson : A. Laird (York, UK)

## Annex 3 – List of Users

|                         |              |          |          |
|-------------------------|--------------|----------|----------|
| DUENAS DIAZ             | Jose         | 18/04/11 | 21/04/11 |
| MENGGONI                | Daniele      | 18/04/11 | 21/04/11 |
| PARKAR                  | Vivek        | 18/04/11 | 21/04/11 |
| DETISTOV                | Pavel        | 16/05/11 | 25/05/11 |
| GUERRO                  | Leonardo     | 19/05/11 | 22/05/11 |
| GLADNISHKI              | Kalin        | 11/05/11 | 22/05/11 |
| KUSOGLU                 | Asli         | 09/05/11 | 24/05/11 |
| BALABANSKI              | Dimiter      | 21/05/11 | 25/05/11 |
| ATASOVA                 | Liliya       | 11/05/11 | 25/05/11 |
| SPOHR                   | Klaus        | 28/11/11 | 12/12/11 |
| CAPPONI                 | Luigi        | 28/11/11 | 08/12/11 |
| MULHOLLAND              | Kieran       | 06/12/11 | 12/12/11 |
| LABICHE                 | Marc         | 29/11/11 | 02/12/11 |
| CAROLL                  | David        | 05/12/11 | 11/12/11 |
| CANNY                   | Thomas       | 28/11/11 | 02/12/11 |
| FERNANDEZ-<br>DOMINGUEZ | Beatriz      | 10/12/11 | 15/12/11 |
| BHATTACHARJEE           | Tumpa        | 16/12/11 | 22/12/11 |
| MELON                   | Barbara      | 18/12/11 | 22/12/11 |
| REGIS                   | Jean<br>Marc | 17/12/11 | 22/12/11 |
| PARKAR                  | Vivek        | 01/02/12 | 10/02/12 |
| PARKAR                  | Vivek        | 13/02/12 | 19/02/12 |
| SANCHEZ -<br>BENITEZ    | Angel        | 08/02/12 | 16/02/12 |
| SHRIVASTA               | Aradhana     | 08/02/12 | 20/02/12 |
| DUENAS DIAZ             | José         | 06/02/12 | 10/02/12 |

Annex 4 – List of Publications (from work carried out under the Transnational Access activity).

**Identification of light particles by means of pulse shape analysis with silicon detector at low energy**

Jose Antonio Duenas, Daniele Mengoni, Vivek V Parkar, Rafael Berjillos, Marlene Assie, Didier Beaumel, Angel Sanchez, Martel Ismael, Nuclear Instrument Methods **A676**(2012)70