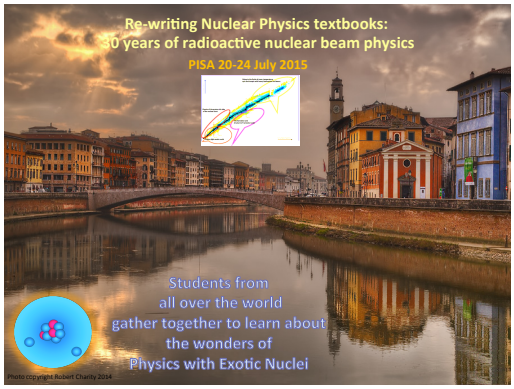
INFN
Istituto Nazionale
di Fisica Nucleare

DIPARTIMENTO DI FISICA
UNIVERSITÀ DI PISA



Pisa, October 2014

Dear Colleagues,

in 2015 we celebrate 30 years since the first genuine work on radioactive ion beams (RIBs) used to study properties of atomic nuclei, leading to a burst of ever increasing activity in the field. Since then Low Energy Nuclear Physics research fed by experiments in low, intermediate and high energy heavy ion facilities has experienced a great revival which has changed deeply our understanding of nuclei and their interactions.

The Italian Nuclear Physics community sponsored by the INFN is proud to organize a celebrating training summer initiative, geared towards students attracted to the field, with the title:

Re-writing Nuclear Physics textbooks: 30 years of radioactive ion beam physics

Featuring as special guests:

Björn Jonson (Fundamental Physics, Chalmers University of Technology, Göteborg, Sweden)
Isao Tanihata (SPANEE and IRCNPC, Beihang University, Beijing, China and RCNP, Osaka University, Japan)

This meeting will be held in Pisa at the INFN and Department of Physics, 20 to 24 July 2015.

An important point of this event is that the progresses we have made in this field in the last 30 years need to be developed further in the future and to this goal we wish to attract and educate the best possible students introducing them to the wonders of Physics with RIBs. We shall try to convey to such students a view of the rich variety of on-going activities in this field, both experimental and theoretical.

Therefore our planned activities will be directed towards students who are in the who are in the process of deciding what graduate studies to specialize. In Italy this happens typically at the end of the 1st year of Master studies. As far as Italy is concerned, INFN will offer about thirty scholarships to participate in this program, to be granted to those students who during the present Academic Year will pass a Nuclear Physics class with top mark. We encourage other national communities to send their students, and hope they will set the same standards for participation.

Content of the activity:

The activity will consist in twelve lectures. Each lecture will cover a topic contained in a standard Nuclear Physics textbook extended to show how our understanding has deeply changed due to the experience accumulated with RIB physics since 1985.The history of halo-nuclei will be used to discuss nuclear radii and the interplay between bound and unbound states, the many (p,2p) experiments with polarized targets as a clarification of the origin of spin-orbit interaction and energy splitting, the short range correlations in small nuclei as a proof of universal behavior of the nuclear interaction, unbound nuclei as an example of final state interaction effects, etc… In order to give the activity a fully international character, and because we aim at feavouring the participation of really young students, the first half day we will propose some introductory lectures given in separated sessions in different languages: Italian, Chinese, English, French, Japanese, Spanish, Polish, Portuguese.

Some specialized seminars will be provided for senior colleagues, providing a panorama on the most recent discoveries in the field of unstable nuclei which might be highlighted in teaching courses or that might be used for practical applications.

Original contributions will be invited for submission to the *European Physical Journal A*. and the editorial board will be composed of Nicolas Alamanos (IRFU, CEA, Saclay, France), Carlos Bertulani (Texas A&M University, Commerce, Texas, USA), Angela Bracco (University of Milano, Italy) and David Brink (University of Oxford, UK).

Organization:

Lectures will be held at the Department of Physics of University of Pisa. There will be three lectures per day for four days. On the fifth day a trip (free of charge) will be organized to visit the INFN Laboratory at Legnaro, near Padova, where SPES, the Italian RIB facility is under construction. Pisa is a historical, pleasant touristic and university town. Student accommodation will be provided at the rate of 35 €/day. Meals are available at many small neighbouring restaurants at an average price of 10 € for lunch and 20 € for dinner.

There will be no fee for undergraduate students. Graduate students, postdocs and senior colleagues will be accepted up to a maximum of 150 participants and a fee of 150 € will be required.

The second circular indicating the titles of the courses and the lecturers will be sent by the end of December. Any country wishing to join will be welcomed. Please write to the secretariat address given below.

Main sponsor: INFN

Other sponsor: IRFU

Dipartimento di Fisica, Università di Pisa

Local Organizing Committee:

A. Bonaccorso, *INFN - Pisa* (co-chair)
G. Casini, *INFN - Florence* (co-chair)
I. Bombaci, *Department of Physics, University of Pisa*
L. E. Marcucci, *Department of Physics, University of Pisa*
A. Kievsky, *INFN - Pisa*
V. Rosso, *Department of Physics, University of Pisa*
M. Viviani, *INFN - Pisa*

Lucia Lilli and Claudia Tofani, INFN - Pisa (Secretaries), ExoticNuclei2015@pi.infn.it
Web page: **http://exotic2015.df.unipi.it**

International Coordination Committee

Andrei Andreyev, *University of York, UK*
Thomas Aumann *GSI - Darmstadt*, Germany
Yorick Blumenfeld, *IPN - Orsay, France* (Chair)
Raquel Crespo, *IST/C2TN, Lisbon, Portugal*
Pierre Descouvemont, *ULB, Bruxelles, Belgium*
Hans Fynbo, *University of Aahrus, Denmark*
Nasser Kalantar, KVI-CAR, Groningen, The Netherlands
Rituparna Kanungo, *St Mary's University, Halifax, Canada*
Adam Maj, *PAN - Krakow, Poland*
Jie Meng, *Peking University, China*
Tohru Motobayashi, *RIKEN, Japan*
Nigel Orr, *LPC - Caen, France*
Berta Rubio, *IFIC - Valencia, Spain*
Thomas Nilsson, *Chalmers, Gotegorg, Sweden*
Lee Sobotka, *Washington University, St Louis, USA*
Dario Vretenar, *University of Zagreb, Croatia*

Italian University Coordination Committee

Mauro Bruno, *University of Bologna*
Francesco Cappuzzello, *University of Catania*
Maria Agnese Ciocci, *University of Siena*
Giampaolo Cò, *University of Lecce*
Giacomo de Angelis, *INFN - LNL, Legnaro*
Domenico Di Bari, *University of Bari*
Alessandro Drago, *University of Ferrara*
Carlotta Giusti, *University of Pavia*
Nunzio Itaco, *University of Napoli*
Silvia Leoni, *University of Milano*
Gabriele Pasquali, *University of Firenze*
Francesco Pederiva, *University of Trento*
Giovanni Pollarolo, *University of Torino*
Francesca Rizzo, *University of Catania*
Giovanni Salmè, *INFN - Roma*
Elena Santopinto, *INFN - Genova*
Sergio Scopetta, *University of Perugia*
Francesca Soramel, *University of Padova*
Claudio Spitaleri, *University of Catania*
Andrea Vitturi, *University of Padova*