

# INFN SEZ.Torino NEWS

March 2016

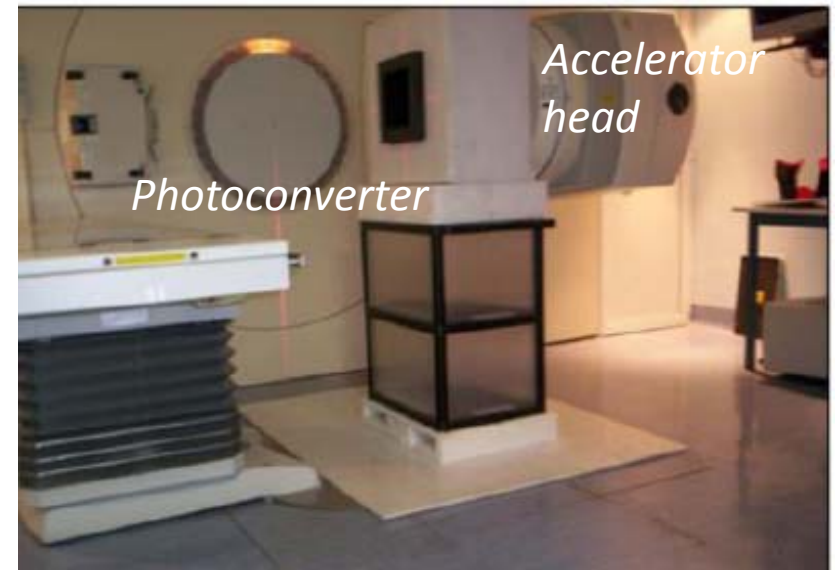
E-LiBaNS PROJECT ( E-Linac Based Neutron Source)

Installation at the Physics Department of Torino University of the first prototype of E-LIBANS Facility

- Neutron source based on high energy ( $>15$  MV)e-linac
- Neutron Flux  $> 10^7$  cm<sup>-2</sup> s<sup>-1</sup>
- Application : biomedicine, space, cultural heritage



Installation of the facility in the bunker of Physics Department, Turin, Italy



Final set-up of E-Libans Facility

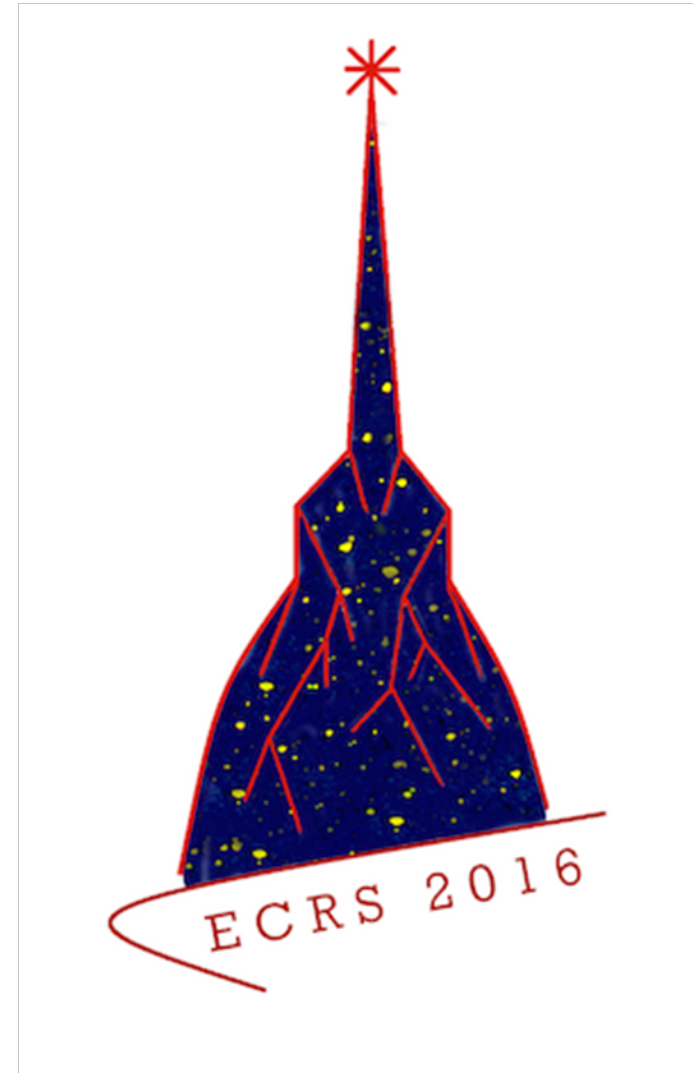
4-9 September 2016

**ECR216**

## **25th edition of the European Cosmic Ray Symposium.**

- *The main goal of the Symposia is that of spreading throughout the European Physics community the information concerning the status of the research in cosmic rays and related fields, recent results, newly emerging ideas and forthcoming experiments.*
- *The conference will take place in Torino, between September 5 and 9 2016, and is sponsored by INFN and the Physics Department of Torino University. Please visit this page for information about the meeting and manage your attendance.*

*[ecrs2016.to.infn.it](http://ecrs2016.to.infn.it)*



Dead line for abstract submission: 15° April

# Italia –Argentine Collaboration

- **CORA Project ( COsmic Rays in Antarctica) Marambio base**  
( $64^{\circ} 13'S - 56^{\circ} 43'W$ )



- **Collaboration agreement 2015-2020** INFN, IAPS-INAF, IAA, UNLP
- **Analysis of dosimetric data** collected in Marambio  
( March-September 2015)



## *Preliminary Results:*

*Evidence for enhancement of secondary neutron dose in South Pole region to respect to North Pole region*

*Possible explanation: rapid variation of geomagnetic field in Antarctica, possible magnetic pole inversion. (Recent data from ESA satellite SWARM)*

[:http://www.esa.int/Our\\_Activities/Observing\\_the\\_Earth/Swarm/Swarm\\_reveals\\_Earth\\_s\\_changing\\_magnetism](http://www.esa.int/Our_Activities/Observing_the_Earth/Swarm/Swarm_reveals_Earth_s_changing_magnetism)

# High Altitude Research Station on Mount Famatina

(5000 m asl, Chilecito -La Rjoja- Argentina)

Collaboration INFN, CNR, Università di Chilecito

## Luglio 2015

- **Education** : *Il Corso de Postgrado Geofisica Aplicada (27-31 Luglio)*
- **Research**: *Neutron dosimetry with passive track detectors:  
CR39 foils, Bismuth 209 stack*

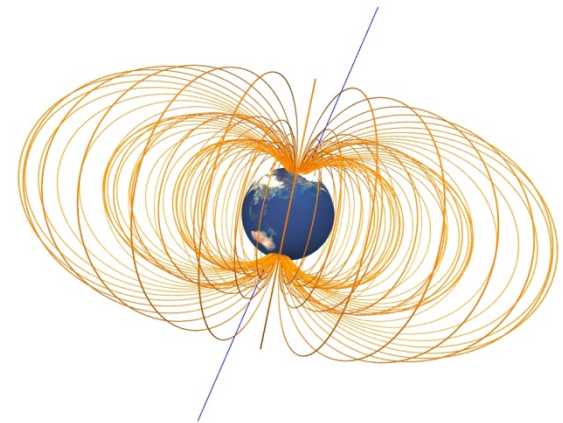
## November 2016:

### **Education** :

- *III Corso de Postgrado Geofisica Aplicada*
- *Exchange of students*
- *Formation of technical staff*
- *Laboratory on track detector chemical etching*
- *Neutron spectrometry with bubble detectors*
- *Unfolding codes*

### **Research**:

- *Neutron dosimetry with passive track detectors: CR39 foils, Bismuth 209 stack,*
- *Neutron Spectrometry with BDS bubble detectors ( BTI, Ontario, Canada)*
- *Analysis of correlation between secondary neutron flux and magetic field variations*
- *Possibility of installation of modular neutron monitor provided by IAPS-INAF, Rome*



## INFN-ASI- CONAE –IAA Collaboration

Con il Direttore del CONAE (Buenos Aires)  
COMISION NATional de Actividad Spatial  
Ing. Varotto



An agreement is in progress , to install  
on board of the next Argentine Satellite  
various dosimetric instruments, to measure  
the radiation at LEO orbits, in correspondence  
to the Antarctic region

Con il Direttore del IAA (Buenos Aires)  
Istituto Antartico Argentino  
Ing. Coria



CONAE Aquarius Satellite