

**FP7-REGPOT-2010-5**

**Upgraded Facility for Development of  
Silicon and Diamond Particle Detectors Systems**

**Proposal acronym: Particle Detectors  
Grant agreement no: 256783**

Rudjer Boskovic Institute logo



Project logo



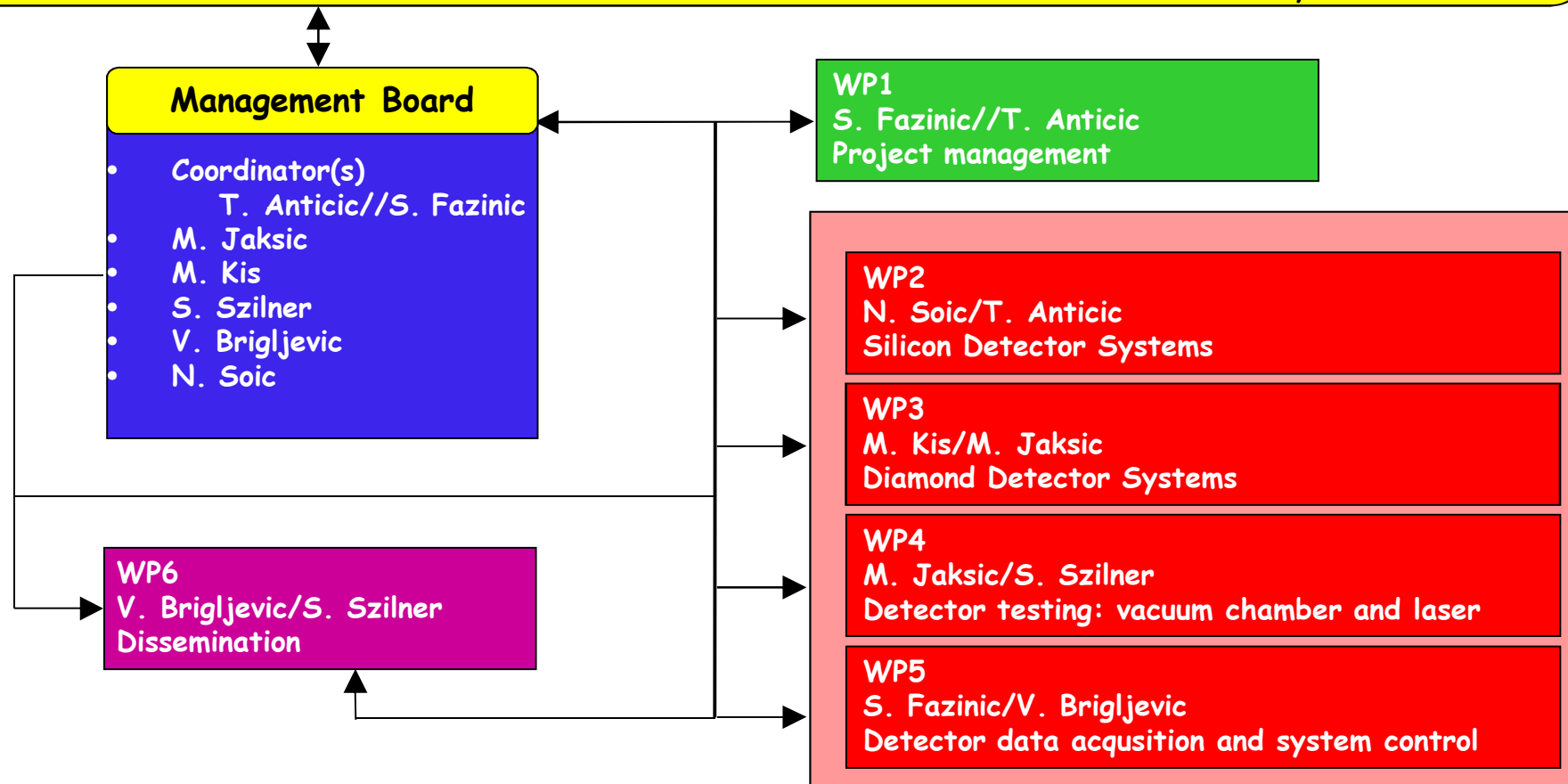
**PARTICLE DETECTORS**

Project acronym

## Project Steering Committee

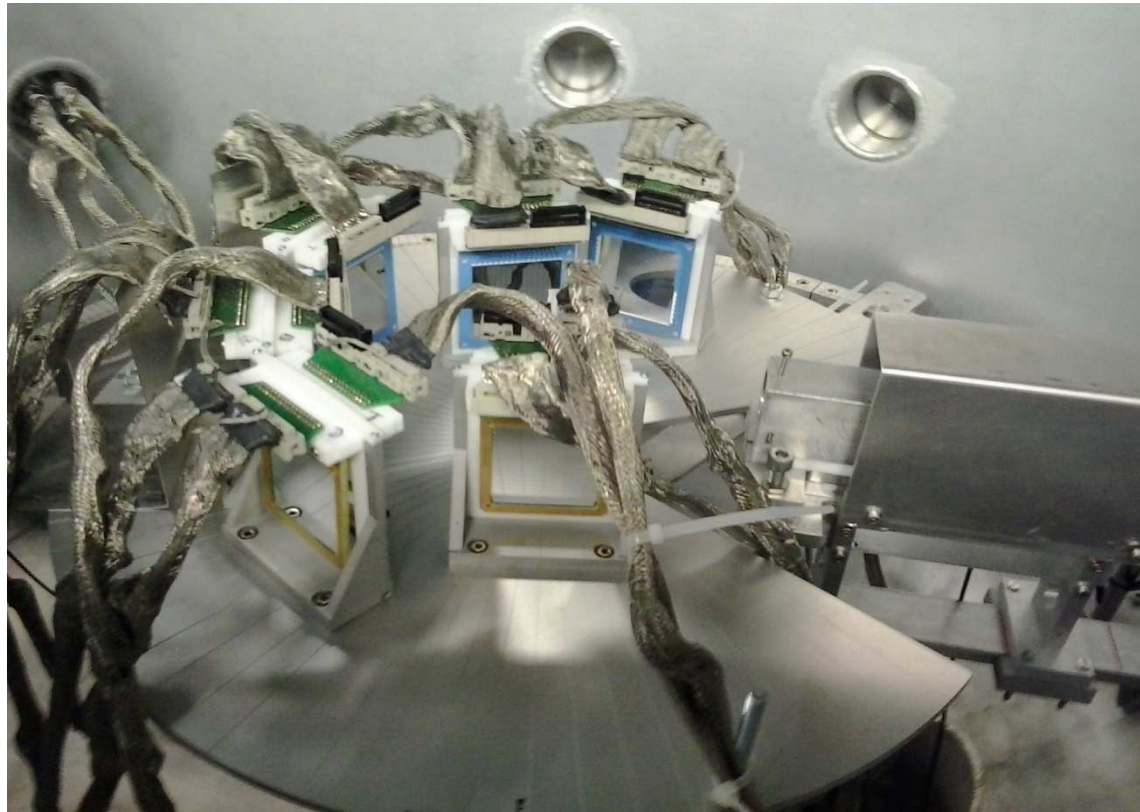
Marek Gadzinski, University of Frankfurt/CERN/NA61  
Joel Goldstein, University of Bristol  
Martin Freer, University of Birmingham  
Marin Roje, RBI deputy director

Djuro Miljanic, RBI Governing Board  
Alexander Oh, Manchester University  
Ettore Vittone, University of Torino  
Ismael Martel, University of Huelva  
Christian Joachim Schmidt, GSI



**WP1**

## WP2



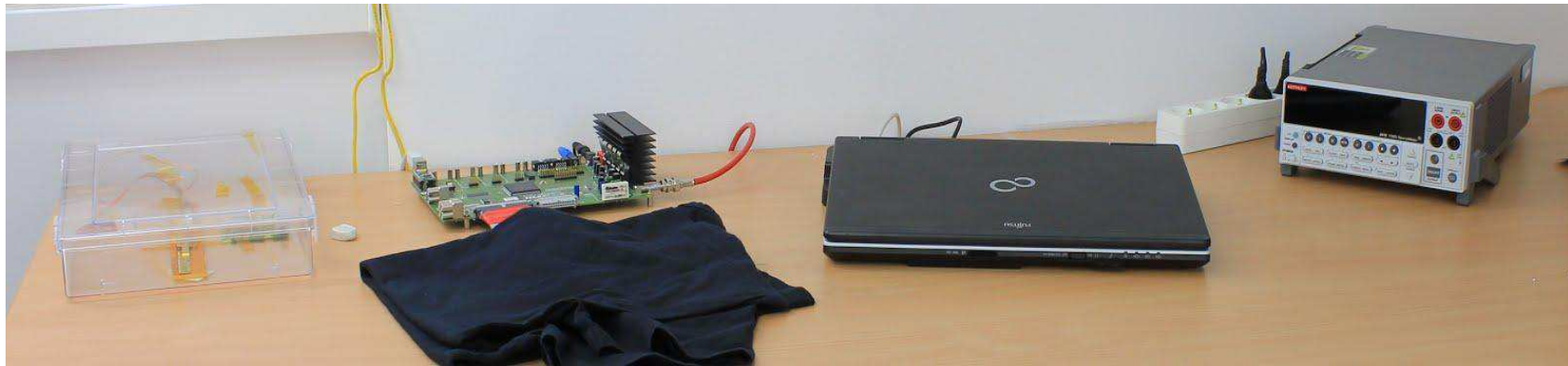
Upgraded silicon detector array mounted in the scattering chamber for testing.

*WP2*



Trapezoidal silicon strip detectors purchased from Micron Semiconductor Ltd.

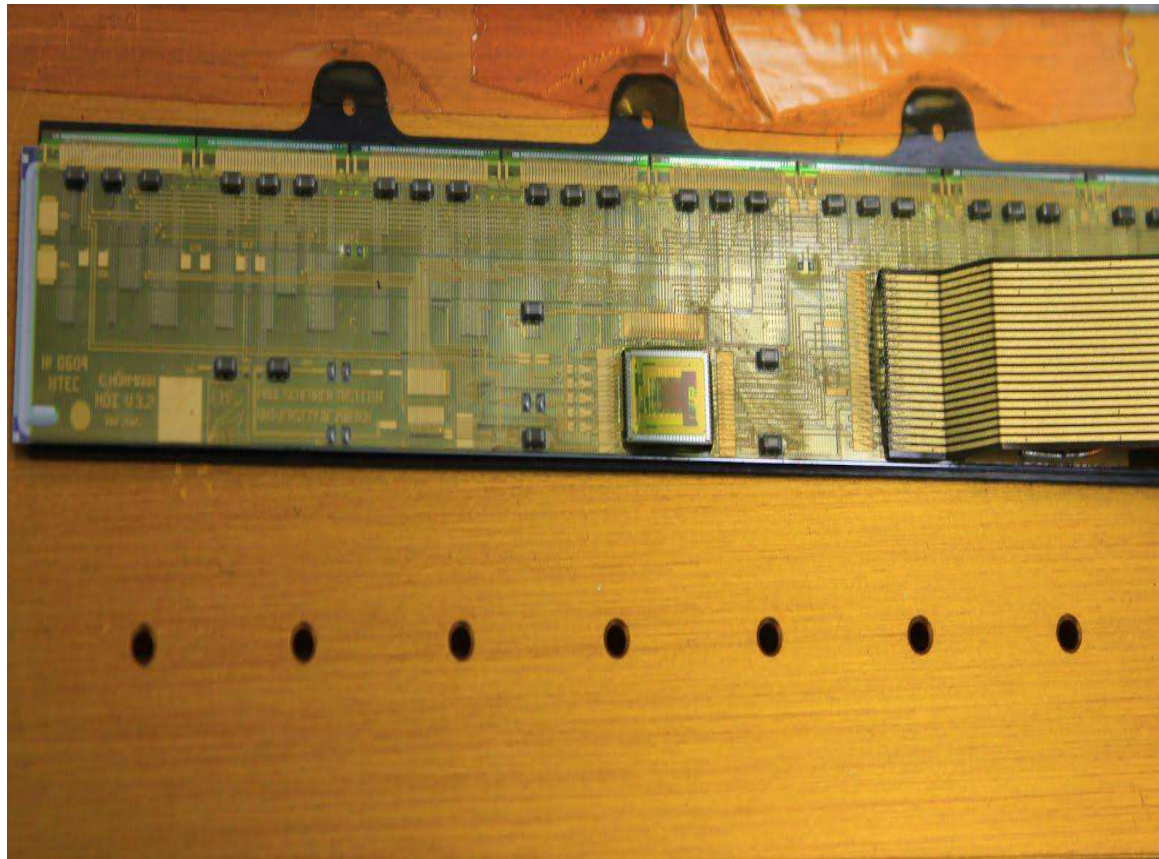
# WP2



Experimental setup of the CMS Pixel Detector half-module at the RBI.



WP2



CMS Pixel Detector half-module.

*WP2*

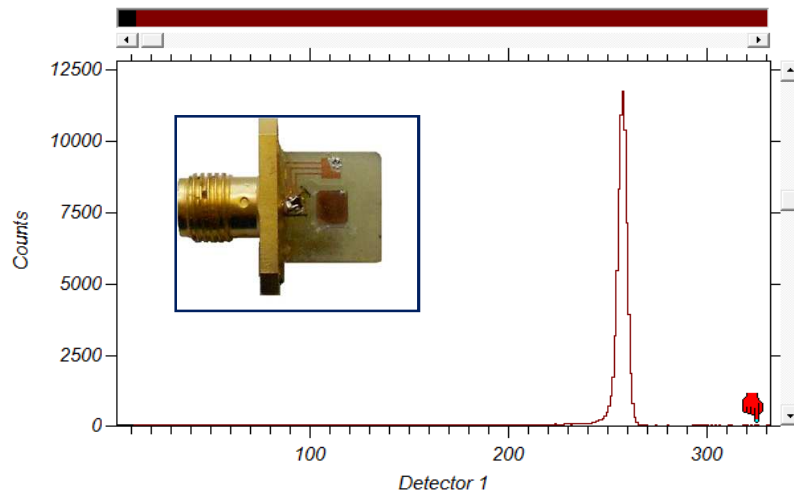


**Silicon Detector Workshop**  
**Split, Croatia, 8-10 October 2012**



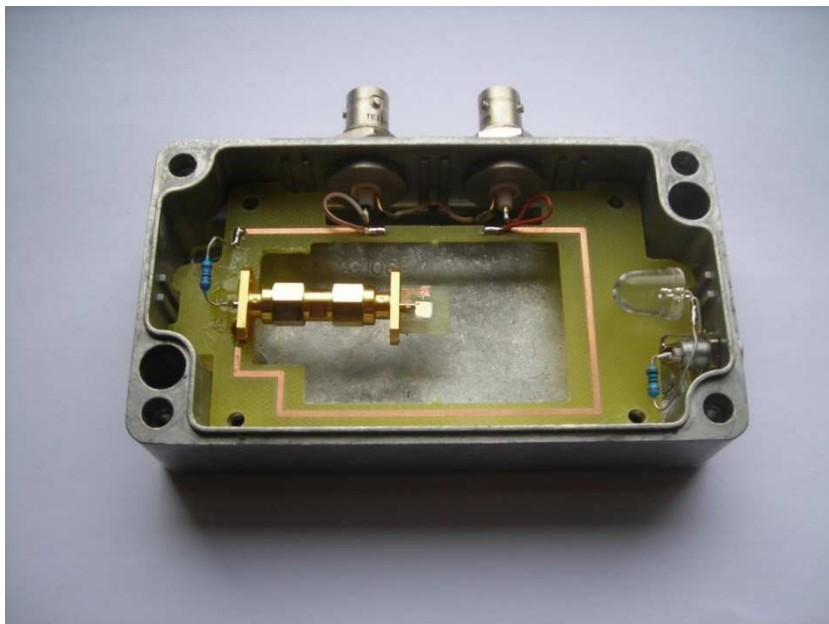


# WP3



Total Sum	ROI Sum	ROI#	Counts	Cursor	Region	Region Sum
73301	72612	10000	1	326	2 332 ,0 12781	72624

Energy spectrum for detection of 2 MeV protons by diamond detector (inset) assembled at RBI using single crystal diamond plate produced by Element Six.

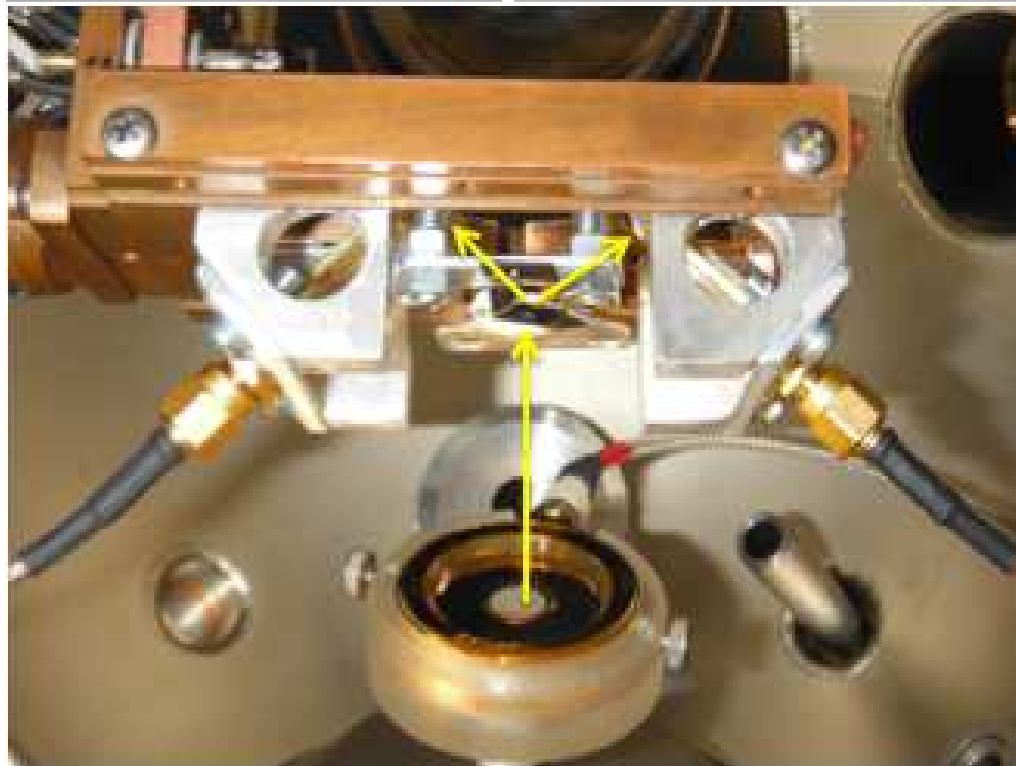


Complete detector in housing for general use.

# WP3



Large area CIVIDEC diamond detector.



Locally constructed module for coincidence spectroscopy.

# WP3



## Diamond Detectors Workshop Particle Detectors Board Meeting

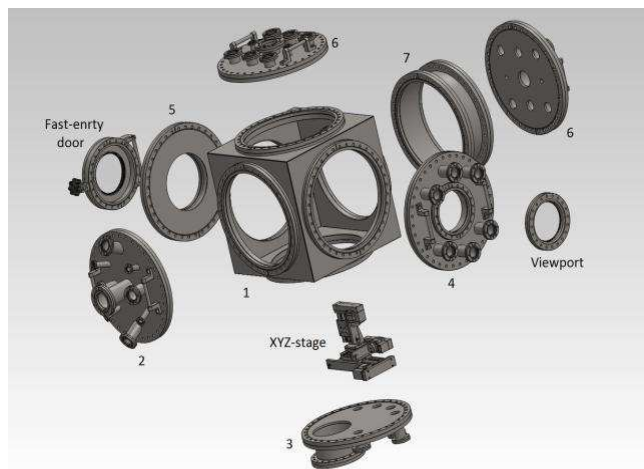
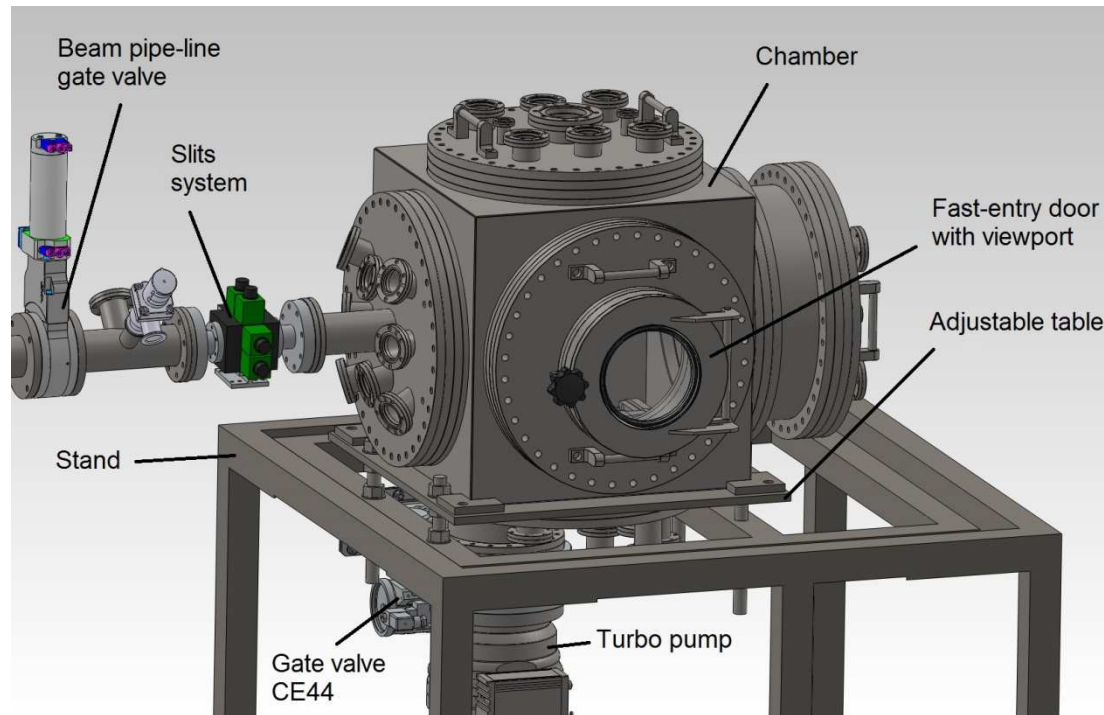
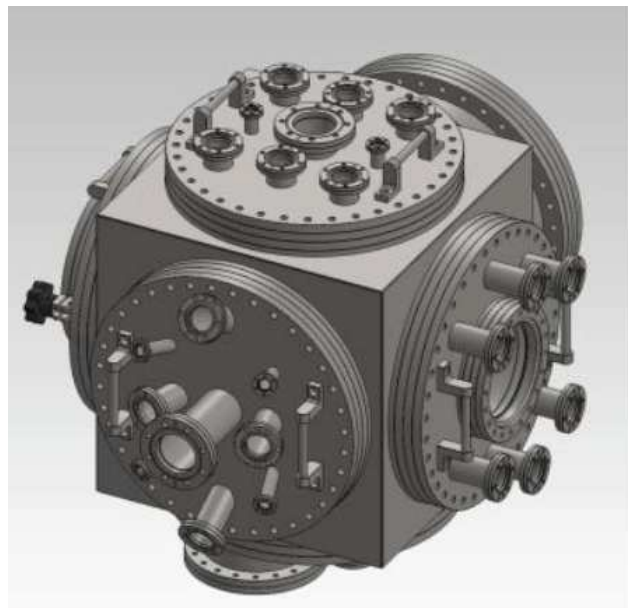
Plitvice Lakes, Croatia, 7 -10 May 2012



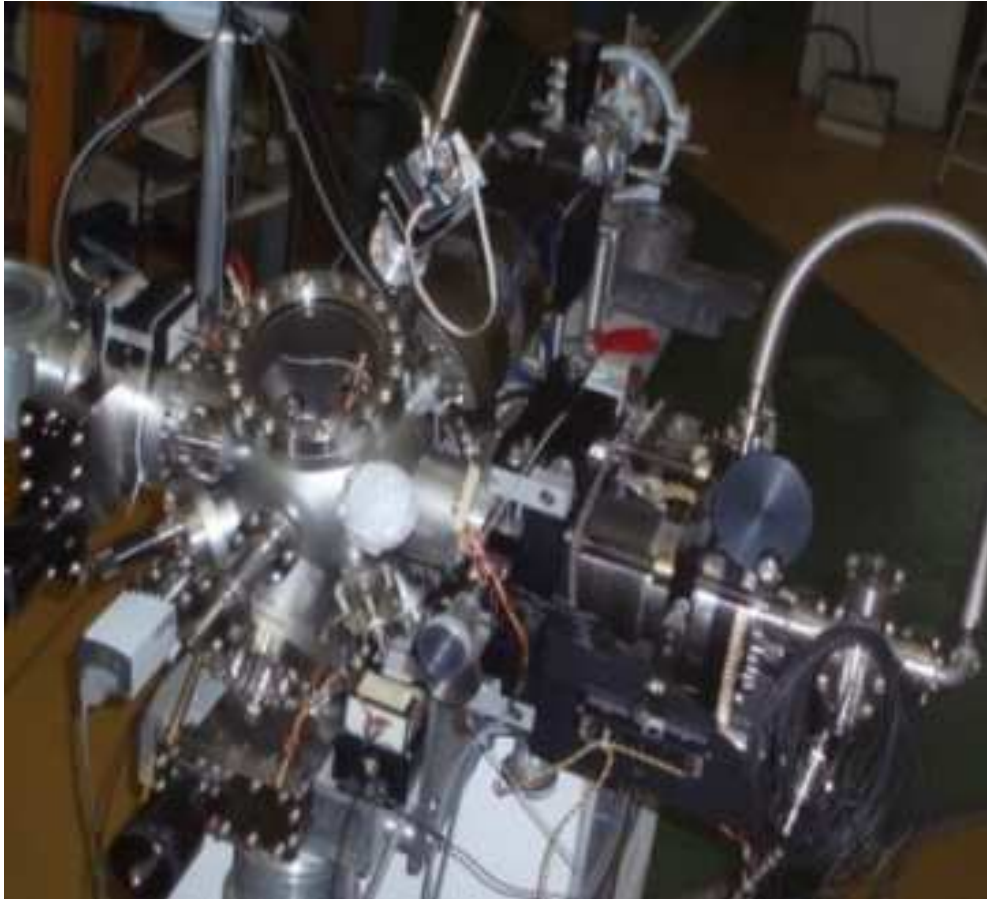


# WP4

## PD Vacuum chamber

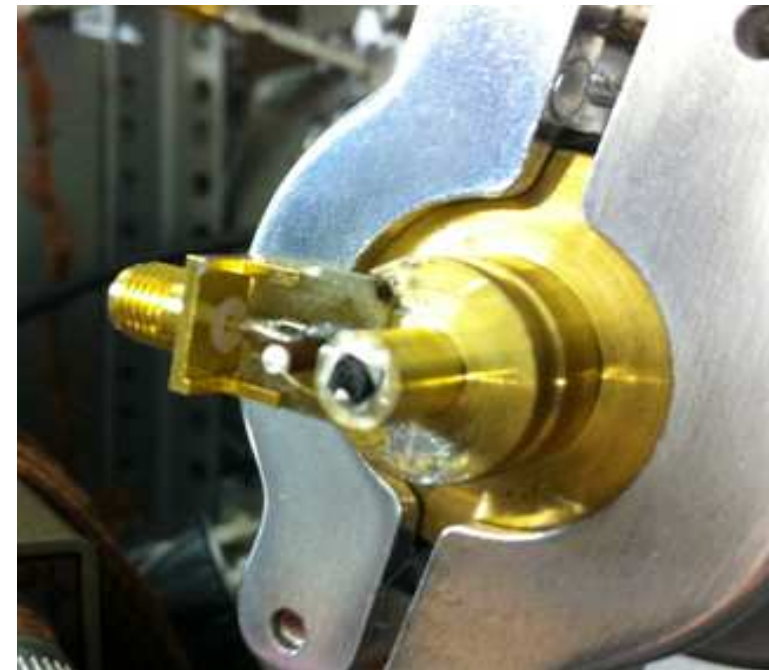


# WP4



Thin vacuum window added to allow microbeam measurements in air

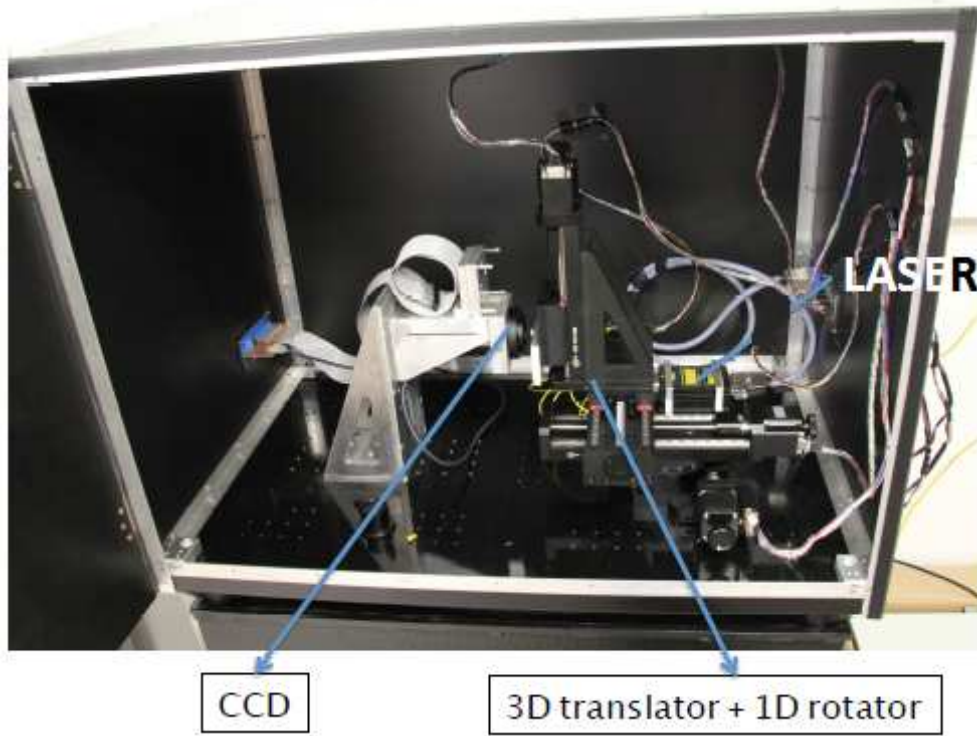
Upgrade of the ion microbeam



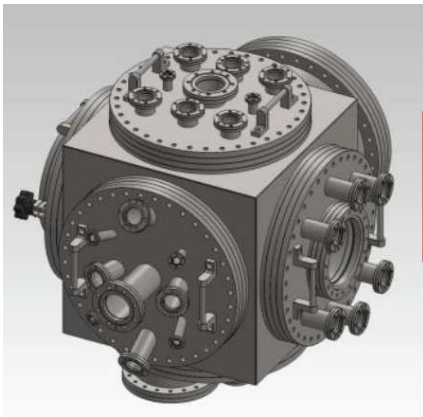


# WP4

## Laser testing



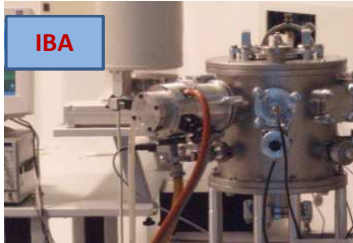
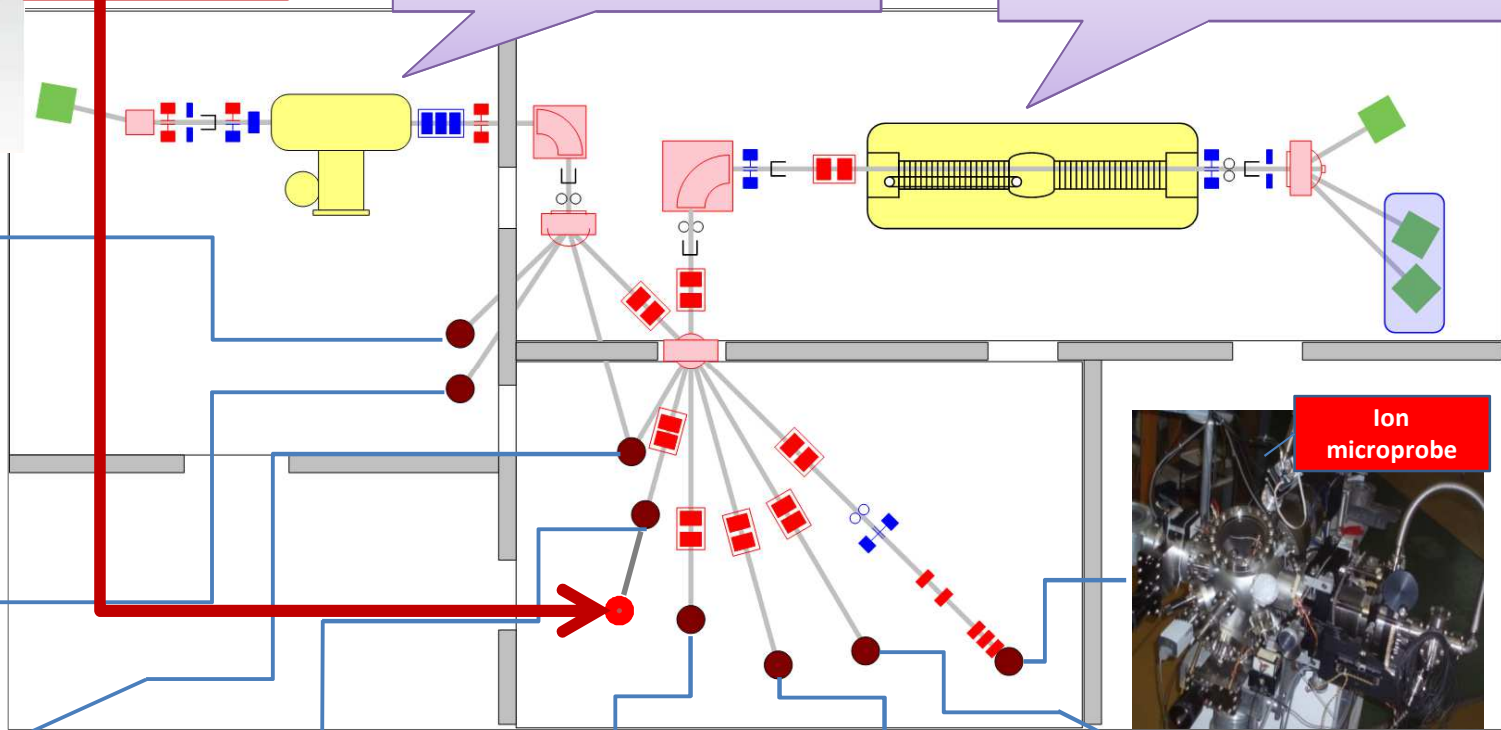
# Tandem Accelerator Facility



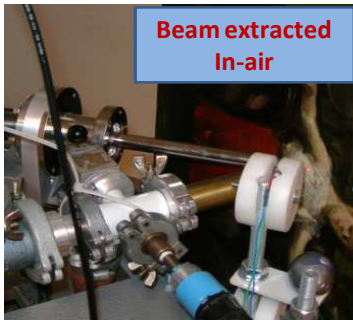
**New PD Chamber**

**1.0 MV HVE Tandetron accelerator**

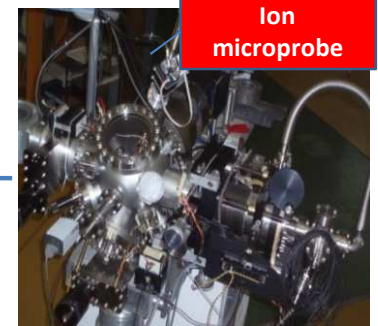
**6.0 MV EN Tandem Van de Graaff accelerator**



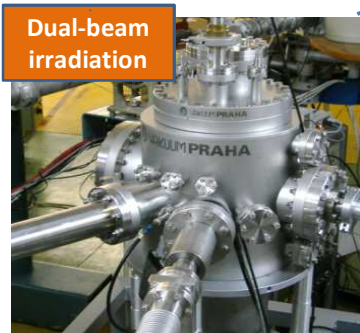
**IBA**



**Beam extracted In-air**



**Ion microprobe**



**Dual-beam irradiation**



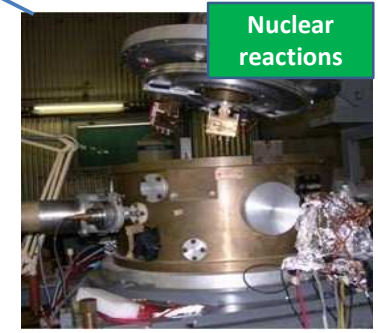
**IAEA beam line**



**TOF ERDA**



**X-Ray crystal spectrometer**



**Nuclear reactions**



**1.0 MV HVE Tandetron  
accelerator**

**6.0 MV EN Tandem Van  
de Graaff accelerator**



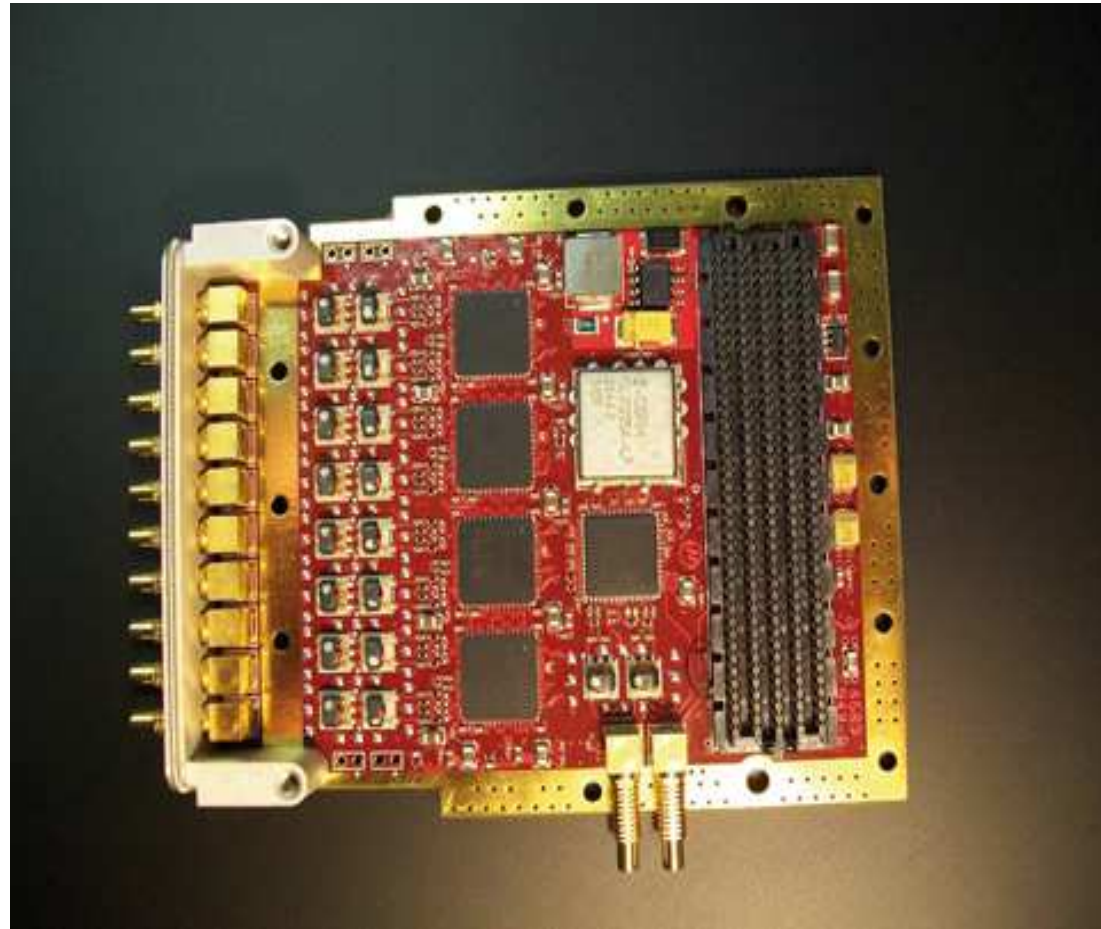


*WP5*



Xilinx development kit.

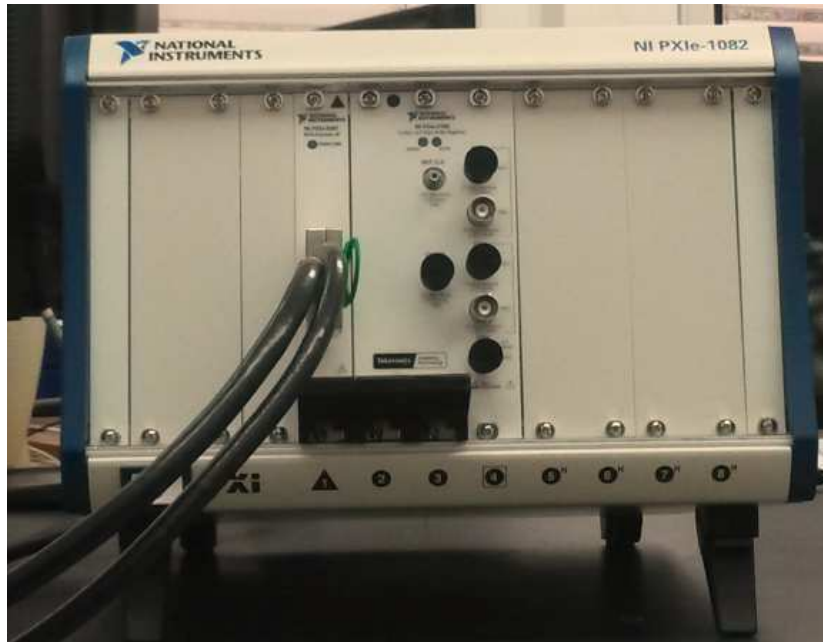
*WP5*



The Avnet Virtex-6 FPGA DSP Kit with AD/DA.

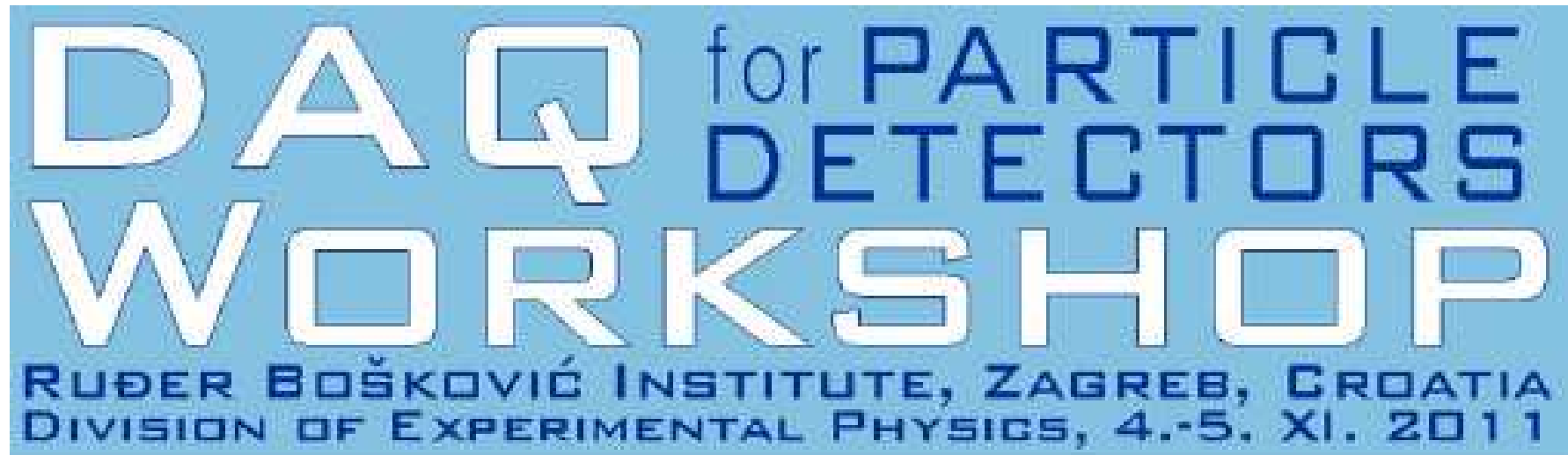


*WP5*



Fast transient DAQ based on NI PXIe-5185 3 GHz, 12.5 GS/s, 8-Bit digitizer.

*WP5*



DAQ for PARTICLE  
DETECTORS  
WORKSHOP  
RUĐER BOŠKOVIĆ INSTITUTE, ZAGREB, CROATIA  
DIVISION OF EXPERIMENTAL PHYSICS, 4.-5. XI. 2011

The logo features the text 'DAQ for PARTICLE DETECTORS WORKSHOP' in a stylized font. 'DAQ' is in large white letters with a blue outline, while 'for PARTICLE DETECTORS' is in smaller blue letters. 'WORKSHOP' is in large white letters with a blue outline. Below this, the location and date are written in blue: 'RUĐER BOŠKOVIĆ INSTITUTE, ZAGREB, CROATIA' and 'DIVISION OF EXPERIMENTAL PHYSICS, 4.-5. XI. 2011'.

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**USPJEH**

**Zagrebačkim i riječkim znanstvenicima Europska Unija daje tri milijuna eura**

Dr. Tomo Arnič iz Instituta 'Ruđer Bošković' u Zagrebu (lijevo) i dr. Bojan Polc sa Sveučilišta u Rijeci (desno) koordinatori su projekta

Autor: Tanja Rudek Objavljeno: 07.03.2010

U sklopu projekta koji se bude provodio u Institutu 'Ruđer Bošković' bit će zaposlena i četiri vrhunska inozemna stručnjaka, što je rijetkost u Hrvatskoj

Preporučiti Budi prvi od svojih prijatelja koji će ovo preporučiti.



Reception at the Office of the President of the Republic of Croatia, Ivo Josipović (left: F. Schiru and L. Grasi)

*Article in daily newspaper Jutarnji list*



# WP6

## Dissemination

### RBI Open Days



### Researchers Nights - 27.9. 2013.



Spark chamber:  
Demonstration of  
cosmic ray detection

