

10th RD51 Collaboration Meeting



Report of Contributions

Contribution ID: 0

Type: **not specified**

Lecture on Gaseous Detectors for Science & Discussion

Friday, October 5, 2012 9:00 AM (1h 10m)

Primary author: Dr SMITH, Graham (BNL)

Presenter: Dr SMITH, Graham (BNL)

Session Classification: Lecture Series

Contribution ID: 1

Type: **not specified**

Lecture on Microelectronics for Science & Discussion

Friday, October 5, 2012 10:30 AM (1h 10m)

Primary author: DE GERONIMO, Gianluigi (Brookhaven National Laboratory (US))

Presenter: DE GERONIMO, Gianluigi (Brookhaven National Laboratory (US))

Session Classification: Lecture Series

Contribution ID: 2

Type: **not specified**

Simulation study of ion back flow for the ALICE-TPC upgrade

Thursday, October 4, 2012 2:00 PM (30 minutes)

Presenter: GUNJI, Taku (University of Tokyo (JP))

Session Classification: WG4 - Simulation

Contribution ID: 3

Type: **not specified**

C2H2F4, measurements and calculations

Thursday, October 4, 2012 2:30 PM (30 minutes)

Presenter: JINGBO, Ye (Tsinghua)

Session Classification: WG4 - Simulation

Contribution ID: 4

Type: **not specified**

CF4, measurements and calculations

Thursday, October 4, 2012 3:00 PM (15 minutes)

Presenter: SAHIN, Ozkan (Uludag University)

Session Classification: WG4 - Simulation

Contribution ID: 5

Type: **not specified**

Bursa gas detector laboratory, status

Thursday, October 4, 2012 3:15 PM (15 minutes)

Presenter: SAHIN, Ozkan (Uludag University)

Session Classification: WG4 - Simulation

Contribution ID: 6

Type: **not specified**

GEM charging up calculations

Thursday, October 4, 2012 5:30 PM (30 minutes)

Presenters: CORREIA, Pedro; VEENHOF, Rob (University of Wisconsin (US))

Session Classification: WG4 - Simulation

Contribution ID: 7

Type: **not specified**

Thick GEM photon detection efficiency

Thursday, October 4, 2012 6:00 PM (30 minutes)

Presenter: MARTÍNEZ MAYORQUIN, Ramón Heberto

Session Classification: WG4 - Simulation

Contribution ID: 8

Type: **not specified**

Solid modelling in neBEM

Thursday, October 4, 2012 4:30 PM (30 minutes)

Presenter: Prof. MUKHOPADHYAY, Supratik (Saha Institute of Nuclear Physics (IN))

Session Classification: WG4 - Simulation

Contribution ID: 9

Type: **not specified**

MHSP, MSGC and GEM

Thursday, October 4, 2012 5:00 PM (30 minutes)

Presenter: Ms BHATTACHARYA, Purba (Saha institute, Kolkata, India)

Session Classification: WG4 - Simulation

Contribution ID: **10**

Type: **not specified**

Micromegas for the ATLAS upgrade: status and plans

Monday, October 1, 2012 4:10 PM (20 minutes)

Presenter: WOTSCHACK, Joerg (CERN)

Session Classification: WG1 - Technologies

Contribution ID: 11

Type: **not specified**

THGEM based fast neutron detector for fan-beam tomography

Monday, October 1, 2012 4:50 PM (20 minutes)

A novel high-efficiency, one-dimensional fast neutron imaging detector intended for future fan-beam transmission tomography applications, was recently proposed. It consists of a multi-layer neutron-to-proton converter made of hydrogenous materials (polymer) coupled to a position-sensitive THGEM detector; the latter collects and multiplies the proton-induced electrons released in the gas gap between the converter foils, thereby sensing the impinging-neutron's position.

We will briefly review the design, operational principles and expected performances of the new detector concept. We will report on the characterization studies and results of electron transport along the small gas gaps of the converter, which affects the performance of the detector, both in terms of detection efficiency and localization properties – measured with a multi-foil converter and a 10x10 cm² THGEM imaging detector; the experimental results are compared to Monte-Carlo simulations ones.

For irradiation with 2.5 MeV neutrons and a total of 300 converter foils, detection efficiencies of ~7% and a spatial resolution of round 1 mm are expected.

Among foreseen applications are neutron tomography in non-destructive testing for the nuclear energy industry, including examination of spent nuclear fuel bundles, detection of explosives & drugs, as well as investigations of thermal-hydraulics phenomena.

Presenter: CORTESI, Marco (Weizmann Institute of Science)

Session Classification: WG1 - Technologies

Contribution ID: 12

Type: **not specified**

GEM based beam monitor developments in Korea

Monday, October 1, 2012 4:30 PM (20 minutes)

Presenter: PARK, sung (Korea University)

Session Classification: WG1 - Technologies

Contribution ID: 13

Type: **not specified**

Update on GEMs for CMS high-eta

Monday, October 1, 2012 3:50 PM (20 minutes)

Presenters: SHARMA, Archana (CERN); HOHLMANN, Marcus (Florida Institute of Technology (US))

Session Classification: WG1 - Technologies

Contribution ID: 14

Type: **not specified**

Developments and tests of Micro Pixel Chamber with Resistive Cathode

Thursday, October 4, 2012 9:00 AM (20 minutes)

Presenter: Dr OCHI, Atsuhiko (Kobe University (JP))

Session Classification: WG2 - Physics issues

Contribution ID: 15

Type: **not specified**

ACTAR-TPC: a new active target time projection chamber for radioactive beam experiments

Thursday, October 4, 2012 9:20 AM (20 minutes)

Presenter: Dr SUZUKI, Daisuke (CNRS/IN2P3/IPNO)

Session Classification: WG2 - Physics issues

Contribution ID: 16

Type: **not specified**

Micromegas performance in magnetic field and in TPC mode

Thursday, October 4, 2012 9:40 AM (20 minutes)

Presenter: ALEXOPOULOS, Theodoros (National Technical Univ. of Athens (GR))

Session Classification: WG2 - Physics issues

Contribution ID: 17

Type: **not specified**

Aging test with resistive Micromegas

Thursday, October 4, 2012 10:00 AM (20 minutes)

Presenter: JEANNEAU, Fabien (CEA - Centre d'Etudes de Saclay (FR))

Session Classification: WG2 - Physics issues

Contribution ID: **18**

Type: **not specified**

Performance of large pixelized Micromegas detectors in the COMPASS environment

Thursday, October 4, 2012 11:20 AM (20 minutes)

Presenters: NEYRET, Damien (CEA - Centre d'Etudes de Saclay (FR)); THIBAUT, Florian (CEA/IRFU)

Session Classification: WG2 - Physics issues

Contribution ID: 19

Type: **not specified**

Photon detection at WIS: Cryo-GPM & avalanche optical imaging

Thursday, October 4, 2012 10:20 AM (20 minutes)

Presenter: ARAZI, Lior (Weizmann Institute of Science)

Session Classification: WG2 - Physics issues

Contribution ID: **20**

Type: **not specified**

Rare event searches with Xe-TMA TPCs

Thursday, October 4, 2012 12:00 PM (20 minutes)

Presenter: Dr GONZALEZ-DIAZ, Diego (Zaragoza University)

Session Classification: WG2 - Physics issues

Contribution ID: 21

Type: **not specified**

GEM R&D for the JLab Hall A experiment

Monday, October 1, 2012 2:20 PM (20 minutes)

Presenters: GNANVO, Kondo (Florida Institute of Technology, Melbourne, FL, USA); GNANVO, Kondo (University of Virginia (US)); LIYANAGE, Nilanga (University of Virginia)

Session Classification: WG1 - Technologies

Contribution ID: 22

Type: **not specified**

Progress on THGEM-based resistive structures

Presenter: ARAZI, Lior (Weizmann Institute of Science)

Contribution ID: 23

Type: **not specified**

Update on GEM DHCaI

Monday, October 1, 2012 2:00 PM (20 minutes)

Presenters: WHITE, Andrew (University of Texas at Arlington); WHITE, Andrew (University of Texas at Arlington (US))

Session Classification: WG1 - Technologies

Contribution ID: 24

Type: **not specified**

Large MPGD developments at CERN workshop: 0.5m² CMS NS2 GEM and 1m² Atlas Resistive Micromegas

Tuesday, October 2, 2012 3:30 PM (20 minutes)

Presenter: DE OLIVEIRA, Rui (CERN)

Session Classification: WG6 - Production

Contribution ID: 25

Type: **not specified**

Lessons from first large GEM prototype structures for CMS

Tuesday, October 2, 2012 4:10 PM (20 minutes)

Presenter: SHARMA, Archana (CERN)

Session Classification: WG6 - Production

Contribution ID: 26

Type: **not specified**

GEM industrialization plans with Korea CMS

Tuesday, October 2, 2012 3:50 PM (20 minutes)

Presenters: KIM, Hyunsoo (Chonbuk National University (KR)); MINSANG, Yoo

Session Classification: WG6 - Production

Contribution ID: 27

Type: **not specified**

Status report tests 10x10 resistive Bulks from Cirea/Elvia

Tuesday, October 2, 2012 4:30 PM (20 minutes)

Presenter: JEANNEAU, Fabien (CEA - Centre d'Etudes de Saclay (FR))

Session Classification: WG6 - Production

Contribution ID: 28

Type: **not specified**

Status report tests 10x10 resistive Bulks from Eltos

Tuesday, October 2, 2012 4:50 PM (20 minutes)

Presenter: HOFFMANN, Maria (University of Copenhagen (DK))

Session Classification: WG6 - Production

Contribution ID: 29

Type: **not specified**

Status of GEM manufacture facility upgrade at Techtra

Tuesday, October 2, 2012 5:10 PM (20 minutes)

Presenter: BIELOWKA, Piotr (TTA Techtra)

Session Classification: WG6 - Production

Contribution ID: **30**

Type: **not specified**

Construction of the STAR forward GEM tracker

Monday, October 1, 2012 2:40 PM (20 minutes)

Presenter: CORLISS, Ross (M.I.T.)

Session Classification: WG1 - Technologies

Contribution ID: 31

Type: **not specified**

GEM-based muon tomography of shielded high-Z materials

Monday, October 1, 2012 3:00 PM (20 minutes)

Presenter: HOHLMANN, Marcus (Florida Institute of Technology (US))

Session Classification: WG1 - Technologies

Contribution ID: 32

Type: **not specified**

R&D Activities with GEM Trackers for Nuclear Physics and Medical Imaging at BNL

Thursday, October 4, 2012 11:40 AM (20 minutes)

Presenter: AZMOUN, Bob (Brookhaven National Laboratory)

Session Classification: WG2 - Physics issues

Contribution ID: 33

Type: **not specified**

Micromegas for COMPASS, project and industrialisation

Thursday, October 4, 2012 11:00 AM (20 minutes)

Presenter: NEYRET, Damien (CEA - Centre d'Etudes de Saclay (FR))

Session Classification: WG2 - Physics issues

Contribution ID: 34

Type: **not specified**

Detector Technologies in PHENIX at RHIC: Past Developments and Future Plans

Monday, October 1, 2012 11:15 AM (45 minutes)

Primary author: Prof. HEMMICK, Thomas (S)

Presenter: Prof. HEMMICK, Thomas (S)

Session Classification: Opening Plenary

Contribution ID: 35

Type: **not specified**

Opening and Welcome

Monday, October 1, 2012 9:00 AM (10 minutes)

Presenters: DEHMELT, Klaus (Stony Brook University USA); Dr TITOV, Maxim (CEA Saclay)

Session Classification: Opening Plenary

Contribution ID: **36**

Type: **not specified**

Discussion

Contribution ID: 37

Type: **not specified**

RD51 Collaboration News

Presenters: ROPELEWSKI, Leszek (CERN); Dr TITOV, Maxim (CEA Saclay)

Contribution ID: **38**

Type: **not specified**

RD51 Collaboration News

Monday, October 1, 2012 9:10 AM (30 minutes)

Presenters: ROPELEWSKI, Leszek (CERN); Dr TITOV, Maxim (CEA Saclay)

Session Classification: Opening Plenary

Contribution ID: 39

Type: **not specified**

Development of innovative resistive GEM alpha detectors for earthquakes

Monday, October 1, 2012 9:40 AM (10 minutes)

Presenter: PESKOV, Vladimir (Universidad Nacional Autonoma (MX))

Session Classification: Opening Plenary

Contribution ID: 40

Type: **not specified**

A low mass microbulk with real XY strips

Monday, October 1, 2012 9:50 AM (10 minutes)

Presenter: GERALIS, Theodoros (Nat. Cent. for Sci. Res. Demokritos (GR))

Session Classification: Opening Plenary

Contribution ID: 41

Type: **not specified**

Thin and high-pitch laser-etched mesh manufacturing and bulking

Monday, October 1, 2012 10:00 AM (10 minutes)

Presenter: COLAS, Paul (CEA - Centre d'Etudes de Saclay (FR))

Session Classification: Opening Plenary

Contribution ID: 42

Type: **not specified**

MPGDs technology laboratory for training, development, fabrication, applications and innovations in Colombia

Monday, October 1, 2012 10:10 AM (10 minutes)

Primary author: GUTIERREZ, Rafael M (Universidad Antonio Nariño)

Presenter: GUTIERREZ, Rafael M (Universidad Antonio Nariño)

Session Classification: Opening Plenary

Contribution ID: 43

Type: **not specified**

Recent developments with Gridpix

Monday, October 1, 2012 10:45 AM (30 minutes)

Presenter: TIMMERMANS, Jan (NIKHEF (NL))

Session Classification: Opening Plenary

Contribution ID: 44

Type: **not specified**

Welcome

Tuesday, October 2, 2012 9:00 AM (5 minutes)

Presenters: OLIVERI, Eraldo (Sezione di Pisa (IT)); TAUREG, Hans (University of Wisconsin (US))

Session Classification: WG5 - Electronics

Contribution ID: 45

Type: **not specified**

New features of APV-SRS-Labview

Tuesday, October 2, 2012 9:05 AM (20 minutes)

Presenters: OLIVERI, Eraldo (Sezione di Pisa (IT)); DE ASMUNDIS, Riccardo (Universita e INFN (IT))

Session Classification: WG5 - Electronics

Contribution ID: 46

Type: **not specified**

SRU readout status of features (via EVO)

Presenter: TARAZONA MARTINEZ, Alfonso (Valencia Polytechnic University (ES))

Contribution ID: 47

Type: **not specified**

Integration of SRU in ATLAS Micromega readout (via EVO)

Tuesday, October 2, 2012 9:25 AM (20 minutes)

Presenter: ZIBELL, Andre (Ludwig-Maximilians-Univ. Muenchen (DE))

Session Classification: WG5 - Electronics

Contribution ID: 48

Type: **not specified**

Running the Micromega SRS readout in ATLAS (via EVO)

Tuesday, October 2, 2012 9:45 AM (20 minutes)

Presenter: Z DROZDOWA BYSZEWSKI, Marcin (CERN)

Session Classification: WG5 - Electronics

Contribution ID: 49

Type: **not specified**

Brief summary on experience with SRS and MPD

Tuesday, October 2, 2012 10:05 AM (20 minutes)

Presenter: GNANVO, Kondo (University of Virginia (US))

Session Classification: WG5 - Electronics

Contribution ID: 50

Type: **not specified**

SRS overview and outlook (via EVO)

Tuesday, October 2, 2012 10:25 AM (20 minutes)

Presenter: MULLER, Hans (CERN)

Session Classification: WG5 - Electronics

Contribution ID: 51

Type: **not specified**

News on the VMM1 ASIC

Tuesday, October 2, 2012 11:00 AM (30 minutes)

Presenter: DE GERONIMO, Gianluigi (Brookhaven National Laboratory (US))

Session Classification: WG5 - Electronics

Contribution ID: 52

Type: **not specified**

BGA packaging of APV-25 Chip

Tuesday, October 2, 2012 11:30 AM (15 minutes)

We have developed an easy to prototype BGA package for the APV-25S charge sensitive pre-amp ASIC. The APV chip, developed for the CMS tracker, is often used to readout GEM as well as silicon strip detectors. To reduce prototyping and development costs we have packaged the APV chips into a BGA. This allows front-end electronics to be developed and tested without the need to design boards with the very fine pitch wire bonding. It also allows boards with failed chips to be repaired easily. We will discuss the design, and production experience, and recommendations for future users.

Presenter: BUCK, Ben (MIT)

Session Classification: WG5 - Electronics

Contribution ID: 53

Type: **not specified**

2D-Readout Board Designs for GEM Detectors

Tuesday, October 2, 2012 11:45 AM (15 minutes)

Traditionally, 2D readout schemes for GEM detectors have used a chemical etching process to expose lines on an underlying layer while still preserving an orthogonal set of lines on the top layer. Due to the thickness of the substrate the area of copper on the lower level must be much greater than on the top to achieve equal charge sharing. As an alternative we have produced 2D readout boards using standard circuit board manufacturing techniques. This method employs pads between the lines on the top layer. The pads are then connected by tiny vias to traces on the lower layer running in a different direction to the top lines achieving a 2D readout scheme. The area of copper for the lines and pads are comparable and better controlled than with the chemical etching approach. Also, since the lines and pads are at the same level, the charge sharing is easily fixed during the design process. This approach allows readout designs other than orthogonal to be developed and tailored to the physics needs. We have studied a variety of different designs from various orthogonal designs to R-Phi designs used in the STAR FGT project, to stereo designs used in the OLYMPUS GEM tracker. XUV designs are also possible with the added benefit of redundancy to resolve multi-hit events. Depending on the feature sizes such 2D readout boards can be produced by a wide range of vendors. We will present our experience producing such boards and show some results from STAR and OLYMPUS.

Presenter: BESSUILLE, Jason (MIT)

Session Classification: WG5 - Electronics

Contribution ID: 54

Type: **not specified**

Update on the BNL SRS readout and analysis system

Tuesday, October 2, 2012 12:00 PM (20 minutes)

At the last collaboration meeting we presented an overview of an alternative to the ALICE Data Acquisition and analysis system to read out the SRS crate. This system has been in production at BNL for a while, and has been adapted by at least one other group. We will briefly outline the design principles and features, and present a selection of measurements performed at BNL as examples. The BNL code, which can run on any modern Linux version, is available to members of RD51.

Presenters: PURSCHKE, Martin Lothar (Brookhaven National Laboratory (US)); Dr PURSCHKE, Martin (BROOKHAVEN NATIONAL LABORATORY)

Session Classification: WG5 - Electronics

Contribution ID: 55

Type: **not specified**

New VFAT frontend for SRS (via EVO)

Presenter: MARTOIU, Sorin (Horia Hulubei National Institute of Physics and Nuclear Enginee)

Contribution ID: 56

Type: **not specified**

rd51 mm tracker & SRS/APV readout using mmDAQ/Recomm (via EVO)

Tuesday, October 2, 2012 2:30 PM (20 minutes)

Presenter: STAMATOPOULOS, Athanasios (National Technical University of Athens, School of Applied Mathematics and Physical Sciences)

Session Classification: WG7 - Test beam

Contribution ID: 57

Type: **not specified**

APV and AMORE, test beam and laboratory data analysis (from SBU on behalf of Lari)

Presenter: KOPONEN, Lari (HIP and Aalto University)

Contribution ID: 58

Type: **not specified**

Test beam, laboratory and CERN facilities

Tuesday, October 2, 2012 2:50 PM (40 minutes)

1. APV and AMORE, test beam and laboratory data analysis (from SBU on behalf of Lari)
2. wg7 status (yorgos and Eraldo)

Presenters: OLIVERI, Eraldo (Sezione di Pisa (IT)); KOPONEN, Lari Mikael (H); TSIPOLITIS, Yorgos (National Technical Univ. of Athens (GR))

Session Classification: WG7 - Test beam

Contribution ID: 59

Type: **not specified**

Piggy Back Micromega Technology: New Results for Sealed Detectors

Tuesday, October 2, 2012 5:30 PM (20 minutes)

Presenter: GIOMATARIS, Ioanis (CEA - Centre d'Etudes de Saclay (FR))

Session Classification: WG6 - Production

Contribution ID: 60

Type: **not specified**

Measurements of drift velocity and longitudinal diffusion of Xe+CF₄ with the NEXTDMDB TPC prototype at LBNL

Thursday, October 4, 2012 3:30 PM (30 minutes)

Presenter: BASTOS DE OLIVEIRA, Carlos Alberto (University of Aveiro (PT))

Session Classification: WG4 - Simulation