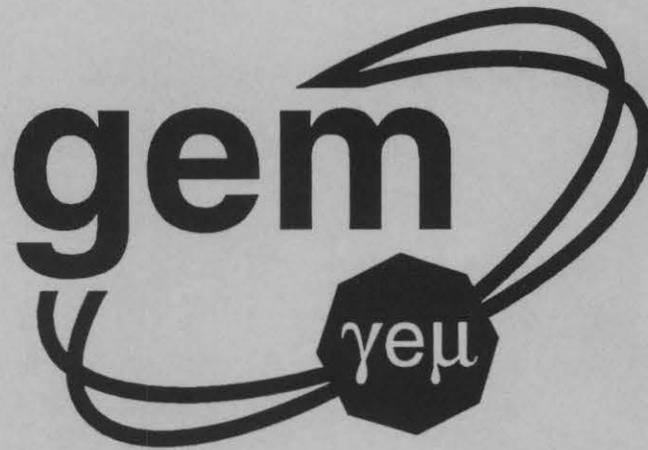


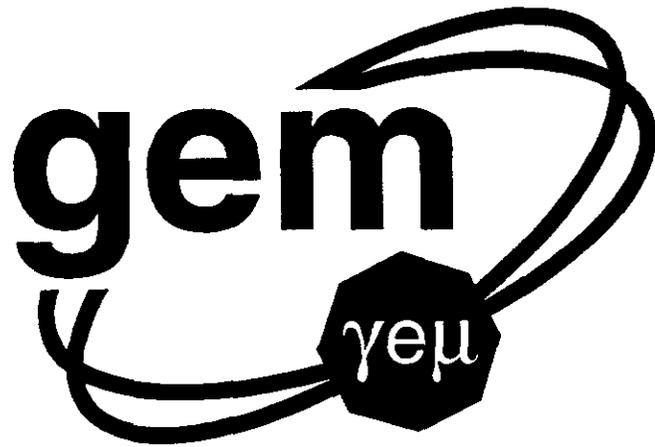
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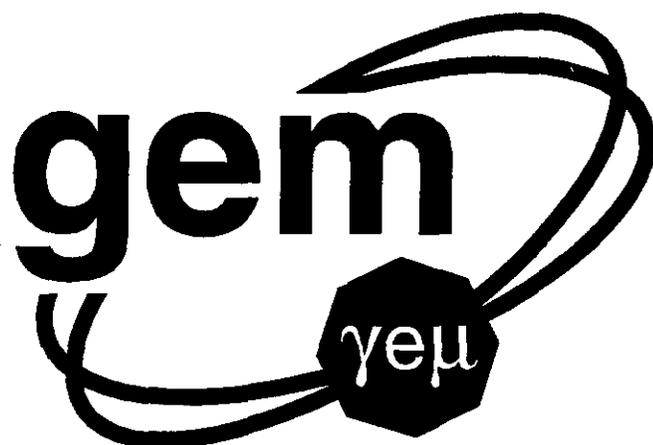
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Reviewers Report: GEM Electronics Design Review	Farr, W. Lecomte, P. Radeka, V.	02/24/93	TN-93-00347
Sagitta Measurement Error and Cost	Sawicki, R.	02/05/93	TN-93-00335

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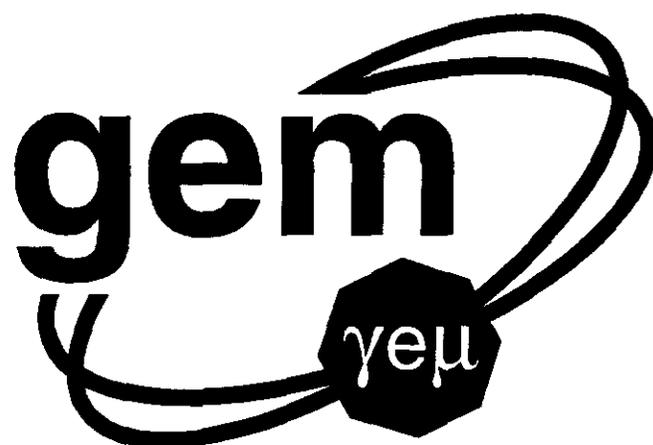
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Technical Note on Fast Calorimeter Simulation for GEM	Fisyak, Yu. McFarlane, K. Peter, S.	02/10/93	TN-93-00292
Testing and Developing the Extended Range Straightness Monitor	Goodwin, D. Paradiso, Joseph	03/04/93	TN-93-00331
The Axial+Projective Alignment for Muon Chambers	Korytov, A.	02/18/93	TN-93-00302
The RDT-RPC Technology Option for GEM	Boston University Brown University Draper Laboratories, C.S. Indiana University Institute for Theoretical and Experimental Joint Institute for Nuclear Research Lawrence Livermore National Laboratory LeCroy Corporation Louisiana State University Massachusetts Institute of Technology	01/29/93	TN-93-00288
To and Pt Stand Alone Trigger in a Muon System Based on Drift Tubes	Korytov, A.	02/01/93	TN-93-00303
TOR: Off-line Event Reconstruction for TTR (User Guide)	Murat, P.	02/17/93	TN-93-00293



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Document Number Index w/Abstract

GDT-000021 Rev. A 12/28/92

GEM Magnet: Request for Proposal

Date is approximate

GDT-000038 12/16/92

Mini-Integration Meeting - SSCL

Agenda, attendees, minutes, and presentation of the GEM Mini-Integration Meeting held at the SSC Laboratory on December 16, 1992.

GDT-000039 12/10/92

Electronic Rack Room Shielding Study Update 2 - Effects of Cable Tray Penetrations

Myatt, R. L.

A request to evaluate the effects of cable tray penetrations on Electronic Rack Room (ERR) shielding has resulted in this update to the previous shielding study, GDT-000023. There are six cable trays per level, each tray cross section measured 0.76 m wide by 0.178 m high. The trays are routed through the north and south walls, just below the raised floors. The project's 50 gauss limit on the peak field within the envelope of the room will again be used as the acceptance criterion. Several computer runs are made with portions of the iron shield deleted to represent the cable tray penetrations. The details and results of the analysis are summarized below.

GDT-000040 01/21/93

Detector Engineering Meeting - Duncanville, Tx.

Agenda, attendees, minutes, and presentation of the GEM Detector Engineering Meeting held at the Holiday Inn in Duncanville, Tx. on January 21, 1993.

GDT-000041 01/22/93

Detector Services Meeting - Duncanville, Tx.

Agenda, attendees, minutes, and presentation of the GEM Detector Services Meeting held at the Holiday Inn in Duncanville, Tx. on January 22, 1993.

GDT-000042 02/19/93

GEM Engineering/Integration Meeting - Duncanville, Tx.

Agenda, attendees, minutes, and presentation of the GEM Engineering/Integration Meeting held at the Holiday Inn in Duncanville, Tx. on January 22, 1993.

GEM DOCUMENTS INDEX
Document Number Index w/Abstract

GDT-000043

Magnet to Muon Integration Control Document

This document has not been received from the author.

GDT-000044

Magnet to Central Tracker Integration Control Document

This document has not been received from the author.

GDT-000045

Magnet to Calorimeter Integration Control Document

This document has not been received from the author.

GDT-000046

Magnet to Central Detector Support Integration Control Document

This document has not been received from the author.

GDT-000047

Magnet Facility Integration Control Document

This document has not been received from the author.

TN-92-00231 Draft

12/01/92

Progress Report on the GEM Detector Baseline Design

GEM Collaboration

This document details parameters of the current GEM detector baseline design. This design will be used for an in-depth analysis of cost, schedule and physics performance.

Draft Copy

GEM DOCUMENTS INDEX

Document Number Index w/Abstract

TN-93-00258

GEM Documents Index -1993

GEM Document Control Center

Index of the GEM Documents produced in 1993. It will be printed in a supplement form every 2 months.

To be published the last day of February, April, June, August, October, and December.

TN-93-00259

12/07/92

Calorimeter Simulation Workshop

Agenda, attendees, and presentations of the GEM Calorimeter Simulation Workshop held at the SSC Laboratory on December 7-8, 1992.

Actual workshop dates are December 7-8, 1992.

TN-93-00260

12/17/92

Central Tracker Meeting - SSCL

Agenda, attendees, and presentations of the GEM Central Tracker Meeting held at the SSC Laboratory on December 17, 1992.

TN-93-00261

12/22/92

Reconstruction of 135 GeV Higgs From Z, Z Star Into Four Muons

Dingus, Peter

We have reconstructed the Higgs $\rightarrow ZZ^* \rightarrow 4$ muons, for a Higgs mass of $M_H = 135$ GeV. The soft PT spectrum of the muons coming from this low mass Higgs can suffer large relative energy losses resulting in both a substantial shift and loss of resolution in the MH distribution. We apply a simple algorithm to replace the missing muon energy and greatly improve both the mean value and resolution of the MH distribution.

TN-93-00262

01/31/93

GEM Technical Design Report

GEM Collaboration

GEM Technical Design Report.

This document is not complete nor ready for distribution.

GEM DOCUMENTS INDEX

Document Number Index w/Abstract

TN-93-00263

01/06/93

Neutron Task Force Meeting

Agenda, attendees and presentations of the GEM Neutron Task Force Meeting held at the SSC Laboratory on January 6, 1993.

TN-93-00264

01/05/93

Pt-Trigger in the End-Cap Muon System: Radial vs. Rectangular Chamber Layouts

Korytov, A.

Shown is the importance of information about theta-angle in end-cap region for muon Pt-trigger. Radial strips and straight strips/tubes are relatively compared.

TN-93-00265

01/08/93

Conceptual Detector Design From the Neutron Fluxes Point of View

Morgunov, V. L.

This article presents an attempt to estimate the lowest reachable level of neutron fluxes in an idealized, conceptual design of the detector. It was shown that most neutron sources in the GEM setup and underground hole is the collimator of Low-Beta Quadrupoles (LBQ). There were four conceptions used: 1) Calorimeter has no cracks for neutrons to escape; 2) Tapered inner hole in Forward Calorimeter; 3) Tapered vacuum tube up to LBQ's Collimator; 4) Shielding around Collimator and LBQ. Minimal neutron flux in volume of GEM conceptual design is $\sim 5 \cdot 10$ to 9th power neutrons/ SSCyear/cm².

TN-93-00266

01/08/93

Cathode Strip Chambers Group Meeting - SSCL

Agenda, attendees, and presentations of the GEM CSC Group Meeting held at the SSC Laboratory on January 8, 1993

TN-93-00267

01/13/93

Physics Simulation Group Meeting - SSCL

Agenda, attendees, and presentations of the GEM Physics Simulation Group Meeting held at the SSC Laboratory on January 13, 1993.

GEM DOCUMENTS INDEX

Document Number Index w/Abstract

TN-93-00268

01/14/93

Measured Characteristics of NIKHEF "Honeycomb" Strip Material

Milner, Cas

Evaluation of strip material developed at NIKHEF as a possible replacement of printed-circuit strips in the CSCs.

TN-93-00269

01/08/93

Sub-Detector Simulation and Parametrization for GEMFAST Meeting - Boston University

Agenda, attendees and presentations of the GEM Sub-Detector Simulation and Parametrization for GEMFAST Meeting held at Boston University on January 8, 1993.

TN-93-00270

01/09/92

Muon Group Meeting - Duncanville, Tx.

Agenda, attendees and presentations of the GEM Muon Group Meeting held at the Holiday Inn in Duncanville, Tx. on December 9, 1992.

TN-93-00271

01/07/93

Muon, Magnet and Calorimeter Interface Meeting - SSCL

Agenda, attendees, minutes and presentations of the GEM Muon, Magnet and Calorimeter Interface Meeting held at the SSC Laboratory on January 7, 1993.

TN-93-00272

01/13/93

GEM Magnet Subsystem January Subcontractor Information Meeting

Presentations of the GEM Magnet Subsystem January Subcontractor Information Meeting held at the SSC Laboratory on January 13, 1993.

TN-93-00273

01/09/93

Need for Dynamic Control of the High Voltage Supply for the GEM Strip Chamber Muon Detector

Weinstein, Roy

Based upon the dependence of resolution on pulse height, and hence on HV x T/P, we conclude that a dynamic feedback HV control is required for proper operation of strip chamber technologies.

GEM DOCUMENTS INDEX

Document Number Index w/Abstract

TN-93-00274

01/18/93

Korean Delegation Meeting - SSCL

Agenda and presentations of the Korean Delegation Meeting held at the SSC Laboratory on January 18-19, 1993.

Actual meeting dates are January 18-19, 1993.

TN-93-00275

01/27/93

Neutron Task Force Meeting - SSCL

Agenda, attendees, and presentations of the Neutron Task Force Meeting held at the SSC Laboratory on January 27, 1993.

TN-93-00276

01/18/93

Pointing Accuracy and Light Higgs Mass Reconstruction in a Gamma Gamma Channel

Efremenko, Yu.

For light Higgs mass reconstruction in the gg channel, the precise determination of the angle between the photons as well as their energy measurement, is important. In this note, the analysis of pointing accuracy for light Higgs mass reconstruction is presented. All calculations were done for the GEM electromagnetic calorimeter with parameters from Baseline 2.

TN-93-00277

01/26/93

CSC Electronics and Trigger Meeting - Stony Brook

Cathode Strip Chambers Group

Agenda, attendees, and presentations of the GEM CSC Electronics and Trigger Meeting held at SUNY-Stony Brook on January 26, 1993.

GEM DOCUMENTS INDEX

Document Number Index w/Abstract

TN-93-00278

06/29/92

Cooling Capacity of Flowing Supercritical Helium

Hale, J. R.

This memorandum describes the thermodynamic behavior of helium flowing in the GEM detector magnet's CICC. The purpose of the calculations described herein is to find optimal cooling for a range of parameters including heat input, mass flow rate, and pressure. The method of analysis is based on work at NET done by H. Katheder our results suggest that by specifying an inlet pressure of approximately 5.4 bar, and a helium mass flow rate of approximately 1.3 g/s, an external heat load of more than 23 watts could be extracted from the 1140 m length of CICC, and the maximum temperature of the helium along the length of conductor would not exceed 6 K. On the other hand, if the outlet temperature were limited to only 5 K for stability reasons, a maximum of only 1.8 watts could be extracted with the corresponding optimal flow rate of approximately 1 g/s, and inlet pressure of 3.9 bar. Because of uncertainty in the value of the Reynold number for this conductor, these results are preliminary. If full-scale flow measurements are ever done in order to measure flow rates and pressure drops, the calculations described in this memo should be repeated.

TN-93-00279

12/16/92

Joule Heating of GEM Detector Bobbins

Radovinsky, A.

A study of Joule heating of GEM detector magnet bobbins has been carried out using the program EDDYCUFF. The results show that maximal Joule heating occurs in the peripheral bobbin walls during the discharge of the magnet. To reduce the heating a segmented bobbin design is suggested.

TN-93-00280

01/15/93

Electromagnetic Forces on Major Iron Components of the SSC GEM Detector

Myatt, R. L.

The GEM Detector includes many sizable carbon steel components, such as the flux shapers, central membrane, vacuum vessels, and associated supporting structures, all of which become magnetized in the presence of the coil's magnetic field. The objective of this report is to determine, by the finite element method, the electromagnetic forces on these iron components. This is achieved with two ANSYS models: a 3-D model which includes only the details of the flux shaper and associated support structure; and an axisymmetric model which includes the flux shaper and its supporting membranes, the coil and vacuum vessel, and the central membrane.

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Document Number Index w/Abstract

TN-93-00281 Draft

01/28/93

Proposal to Use Separated Profile Strip Chambers for the GEM Muon System

Lau, K.
Mayes, B.
Pyrlik, J.
Weinstein, R.

A report is presented on (a) Results of tests of the Separated Profile Strip Chamber prototype, (b) A cost estimate of the GEM muon barrel in this strip geometry and (c) other specific technical questions. Parts (b) and (c) are compared, where possible, to the MWPC geometry. This is a draft of work in progress.

TN-93-00282

01/18/93

Muon Group Meeting - SSCL: Muon Technology Choice Performance Comparisons

Agenda, attendees, and presentations of the GEM Muon Group Meeting held at the SSC Laboratory on January 18-19, 1993.

Actual meeting dates are January 18 and 19.

TN-93-00283

01/27/93

Joule Heating of GEM Detector Radiation Shields

Radovinsky, A.

Studies were carried out to determine Joule heating in and Lorentz forces acting on the GEM detector magnet LN radiation shields using the program EDDYCUFF. The effects seen during coil charge and discharge have been compared. Panels with various cooling tube configurations have been analyzed. Configurations include: electrically interconnected tubes of adjoining panels; panels with tubes having electrical insulating breaks; and panels with no tubes. The distributions of the heating energy and of the electromagnetic forces between the outer, inner and end panels of the radiation shields were obtained. In addition the effects related to the superinsulation have been analyzed.

TN-93-00284

02/03/93

Physics Simulation Group Meeting - SSCL

Agenda, attendees and presentations of the GEM Physics Simulation Group Meeting held at the SSC Laboratory on February 3, 1993.

TN-93-00285

02/08/93

Alternative Trigger Scheme for the GEM

This document has not been received from the authors.

GEM DOCUMENTS INDEX

Document Number Index w/Abstract

TN-93-00286

09/18/92

GEM Detector Computing Study: Study of Combined On-Line (Level 3) and Off-Line Facility

Cornell, L.
McFarlane, K.

This report describes the results of a study that used discrete-event system simulation to analyze various configurations of an architecture for the GEM detector on-line and off-line computing facility. Primary emphasis was given to the computing resources required to perform Level 3, Pass 1 and Pass 2 processing. Also included was an analysis of the mass storage requirements to store all Level 3 and Pass 1 output and to retrieve all Pass 2 data as a post-processing activity.

TN-93-00287

02/03/93

GEM Muon Group Meeting - Duncanville, Tx.

Agenda, attendees, and presentations of the GEM Muon Group Meeting held at the Holiday Inn in Duncanville, Tx. on February 3, 1993.

TN-93-00288

01/29/93

The RDT-RPC Technology Option for GEM

Boston University
Brown University
Draper Laboratories, C.S.
Indiana University
Institute for Theoretical and Experimental Physics - (ITEP) Moscow
Joint Institute for Nuclear Research
Lawrence Livermore National Laboratory
LeCroy Corporation
Louisiana State University
Massachusetts Institute of Technology
Michigan State University
Moscow State University
Superconducting Super Collider Laboratory
University of Rome & Istituto Nazionale di Fisica Nucleare
University of Tennessee

A muon system for the GEM SSCL detector based on Round Drift Tubes (RDT) has many attractive features. The Pt-trigger and beam crossing tag for the RDT tracking system can be accomplished by either a PWC system, similar but less costly in design than Cathode Strip Chambers, or by a promising new type of RPC chamber. Given the economic construction of these chamber technologies a system can be envisioned with both good momentum reconstruction performance and pattern recognition capabilities. Full-scale chamber prototypes based on the RDT and RPC technologies have been constructed and tested successfully at the Texas Test Rig. Spatial resolutions have been measured in two designs of RDT chambers which meet or exceed the baseline resolution requirement of 100 μ m per chamber layer.

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Document Number Index w/Abstract

TN-93-00289 03/15/93

GEM Beam Pipe Installation Plan

This document has not been received from the author.

TN-93-00290 03/15/93

Calculation of Pressure Distribution of Vacuum System for GEM Detector

This document has not been received from the author.

TN-93-00291 01/26/93

ADC Device Report: HS9008RH

Crawley, H. B.
McKay, R.
Meyer, W. T.
Nutter, Scott
Rosenburg, E. I.
Thomas, W. D.

This document presents results from tests performed on the HS9008RH ADC. These tests were performed primarily to evaluate the suitability of this device for use in the GEM Central Tracker at the SSC experiment. Basic performance characteristics and susceptibility of these characteristics to radiation were examined. Results indicate that the device is radiation hard to 6 Mrad of 1.25 MeV γ radiation from a ^{60}Co source with no degradation in performance, but that the base performance of the device worsens rapidly above a sampling rate of 15 MSPS. A description of the tests is found in the write-up "A Guide to the Ames ADC Tests, Version 2.0", IS-5086, available from the Ames Laboratory High Energy Physics group, 12 Physics, Iowa State University, Ames, Iowa, 50011 USA.

TN-93-00292 02/10/93

Technical Note on Fast Calorimeter Simulation for GEM

Fisyak, Yu.
McFarlane, K.
Peter, S.

This note describes a first approach to establish a fast and precise calorimeter simulation for the GEM detector within the framework of SIGEM, which is based on GEANT. The note consists mainly of a loose collection of related papers. Its idea is to establish a basis suitable for future development.

GEM DOCUMENTS INDEX

Document Number Index w/Abstract

TN-93-00293

02/17/93

TOR: Off-line Event Reconstruction for TTR (User Guide)

Murat, P.

This note contains detailed description of TOR - the TTR Off-line Reconstruction code. TOR provides capabilities to process the TTR data, reconstruct tracks of cosmic particles detected by TTR and to study the resolution of high precision drift and cathode strip chambers. Program was intensively used during the TTR tests of GEM muon chambers and more that 106 events were reconstructed with TOR to the moment. TOR is written in FORTRAN 77 and FORTRAN 77 extensions were widely used in coding. The program runs on HP Cluster of SSCL PDSF computing facility under UNIX operational system.

TN-93-00294

02/26/93

Physics Processes and the GEM Trigger

Uijterwaal, Henk
McFarlane, Kenneth

This note starts with an overview of the physics processes and their typical signatures that should be accepted by the GEM trigger and the background processes that should be rejected by the trigger. The next section gives an (incomplete) list of the trigger data (the so-called trigger primitives) available at the three trigger levels. The signatures of the physics events can be written in terms of the trigger primitives. This has been done for the Level 1 trigger. The result is a list of 12 trigger conditions. A logical "OR" of these conditions will accept all physics processes listed in this note and is a starting point for the study of the physics acceptance and background reduction of the Level 1 trigger system. We used our trigger conditions, as an example, to select $H_0 \rightarrow \gamma\gamma$ and minimum bias events. Our preliminary results show a physics acceptance of $O(90)\%$ and a background reduction to $O(20) kHz$. These values are close to what one expects from the Level 1 trigger. The appendix of this note contains a calculation of the interaction rate between the proton-beams and the residual gas in the Beam pipe.

TN-93-00295

02/08/93

Missing *ET* in Jets Due to Leakages into Scintillator Barrel Calorimeter

Shmakov, Konstantin

Missing ET arising from fluctuations of the tails of the high PT jets in the Scintillator Barrel Calorimeter (SB) if the latter is not instrumented is compared with natural missing ET background from neutrino. Using the GEANT parameterization of hadronic showers in SB it is shown that non-instrumented SB will generate a background to the missing ET measurements up to a few TeV. Though this background is about one order of magnitude below the natural "irreducible" background from neutrino its contribution might become important. An attempt to reduce the neutrino background using associated leptons produces in the same event is discussed.

GEM DOCUMENTS INDEX

Document Number Index w/Abstract

TN-93-00296

03/01/93

GEM Software Users Guide

McFarlane, K.
Sheer, I.

The motivation for and a description of the GEM software framework is described. This framework which has been implemented at the SSC includes the following elements: coding conventions, distribution, documentation, examples, organization, utilities, and version control. A description of how to get started with the GEM software framework is also presented.

TN-93-00297

03/01/93

Detailed Simulation and Performance Parametrization of the GEM Muon Detector

Wenaus, Torre

This document has not been received from the author.

TN-93-00298

02/09/93

Purification of Liquid Krypton for GEM

Rahm, David C.

Following tests at Brookhaven and at CERN, it became clear that special precautions and purification will be necessary to use Kr in a calorimeter as compared to using Ar. My conclusions are that GEM must be very careful in the choice of construction materials and provide for purification of the Kr in both the liquid and gas phases.

TN-93-00299

02/24/93

GEM Neutron Task Force Meeting - SSCL

Agenda, attendees, and presentations of the GEM Neutron Task Force Meeting held at the SSC Laboratory on February 24, 1993.

TN-93-00300

02/23/93

GEM Physics Simulation Meeting - SSCL

Agenda, attendees, and presentations of the GEM Physics Simulation Meeting held at the SSC Laboratory on February 23, 1993.

GEM DOCUMENTS INDEX

Document Number Index w/Abstract

TN-93-00301

02/02/93

Interpolating Cathode Strip Chambers of the GEM Muon System: Prototype Development and Performance

Polychronakos, V.

This document has not been received from the author.

TN-93-00302

02/18/93

The Axial+Projective Alignment for Muon Chambers

Korytov, A.

Proposed is a possible realization of an axial alignment technique, based on a stretched wire with the mini-strip readout. The advantage of the axial alignment is combination with the projective one is discussed and the merits of the proposed scheme are presented.

TN-93-00303

02/01/93

To and Pt Stand Alone Trigger in a Muon System Based on Drift Tubes

Korytov, A.

We describe an option for the time and momentum muon trigger based on drift tubes only. Simulation, experimental data and electronics analysis prove that the scheme is viable (reliable and well within the cost budget).

TN-93-00304

02/04/93

Collaboration Council Meeting - Duncanville, Tx.

Agenda and presentations of the GEM Collaboration Council Meeting held at the Holiday Inn in Duncanville, Texas on February 4, 1993.

TN-93-00305

03/01/93

Scintillating Tiles: Production and Light Readout

Cohn, Hans

Efremenko, Yuri

Tarkovsky, Evgeni

A report is given on discussions held at Fermilab and CEBAF on techniques and considerations in the production of scintillator tiles with WLS fiber readout. Emphasized are material selection, groove cutting, gluing, fiber splicing, mirroring, optical coupling, and tooling.

The date is actually March 1993.

GEM DOCUMENTS INDEX

Document Number Index w/Abstract

TN-93-00306

02/01/93

Module of Electromagnetic Secondary Emission Flight Type Calorimeter

Bitsadze, G. S.
Chernetsov, M. I.
Khrenov, Yu. V.
Kobayashi, M.
Manuilov, I. V.
Medvedkov, A. M.
Rykalin, V. I.
Tolmachev, V. T.
Zholobov, G. V.

The prototype of the module of Electromagnetic Secondary Emission Flight Type Calorimeter (SEFCAL) is described. The design of the SEFCAL, first experimental results, obtained in particle beams and Monte-Carlo calculations, are presented. The energy resolution of the calorimeter for 26 GeV electrons is $\sigma E/E \approx 23\%$.

The date is not exact. The document was received in the document control center in February.

TN-93-00307

02/01/93

Prototype Silicon Preradiator for the SSC

Arodzero, A.
Bashindzhagyan, G.
Brau, J.
Frey, R.
Furuno, K.
Hwang, H.
Mason, D.
Strom, D.
Todd, R. A.
Yang, X.

We describe the design and first results from the test of a prototype of a preradiator detector. Such a detector could be used to enhance the identification of photons and electrons at the Superconducting Super Collider (SSC). Specifically, it may be used by the GEM detector to distinguish between single photons from Higgs decay and background photon pairs from π^0 decay. Our prototype consists of tungsten radiator followed by silicon strip detectors. The tungsten thickness was changeable, varying from 0 to 3 radiation lengths. Two silicon detectors, oriented in X and Y, consist of 48 strips, each of length 48mm. The pitch is 1mm. This granularity is required for separating single and multi-photons at the SSC. The readout is achieved by low-noise, low-power custom preamplifier chips mounted directly on the detectors via custom circuit boards. This preradiator was tested in a beam at Brookhaven (BNL) in July 1992. A lead glass array placed behind the silicon was used to determine energy resolution effects. The results from the test on spatial distributions and energy resolution, including correction for the energy deposited in the preradiator are presented, along with comparisons to EGS simulations.

The date is not exact. The document was received in the document control center in February.

GEM DOCUMENTS INDEX

Document Number Index w/Abstract

TN-93-00308

02/12/93

Axial Support Bar Study

Myatt, S. J.

The stress levels in a long thin plate which serves as an axial cold mass support rod on the Gamma Electron Muon (GEM) Detector are the focus of this study. The bar is 45.72 cm (18") wide by 593.75 cm (233.76") long. The nominal tensile load carried by each axial support when the coil is energized is 6.672e6 N, (1.5e6 lbs.). The materials and thicknesses in this study are varied. There are eight bars, located every 45 degrees around the vessel. Only one bar is modeled using ANSYS. A flare of 30 degrees over 120 cm (47.24") of the axial length exists, but is not part of the model. The bars are proposed to be made out of titanium, or Inconel. Several thicknesses are modeled: 3.30 cm, 5.08 cm, and 10.16 cm, (1.3", 2", and 4"). Material properties are taken from tables for thinner plates. These data provide an initial estimate of expected stress levels, and allow a determination to be made as to whether or not this bar undergoes plastic deformations. Since the radial displacements are larger than one half the plate thickness, a large deflection solution is required. The applied load, (pulling on the displaced bar), increases the bending stress beyond that which is predicted from conventional beam theory. ANSYS provides a means to run a large deflection problem which automatically updates the stiffness matrix to reflect the deformed shape. In addition, a non-large deflection ANSYS run is made, and the results compared to conventional theory.

TN-93-00309

TDR-RELATED

Lissauer, D.

This document has not been received from the author.

TN-93-00310

TDR-RELATED

Lissauer, D.

This document has not been received from the author.

TN-93-00311

TDR-RELATED

Lissauer, D.

This document has not been received from the author.

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TN-93-00312

TDR-RELATED

Lissauer, D.

This document has not been received from the author.

TN-93-00313

TDR-RELATED

Lissauer, D.

This document has not been received from the author.

TN-93-00314

TDR-RELATED

Lissauer, D.

This document has not been received from the author.

TN-93-00315

TDR-RELATED

Lissauer, D.

This document has not been received from the author.

TN-93-00316

TDR-RELATED

Lissauer, D.

This document has not been received from the author.

TN-93-00317

TDR-RELATED

Lissauer, D.

This document has not been received from the author.

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TN-93-00318

TDR-RELATED

Lissauer, D.

This document has not been received from the author.

TN-93-00319

TDR-RELATED

Lissauer, D.

This document has not been received from the author.

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Lissauer, D.

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TN-93-00321

TDR-RELATED

Lissauer, D.

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TN-93-00322

TDR-RELATED

Lissauer, D.

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TN-93-00323

TDR-RELATED

Lissauer, D.

This document has not been received from the author.

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Document Number Index w/Abstract

TN-93-00324

TDR-RELATED

Lissauer, D.

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TN-93-00325

TDR-RELATED

Lissauer, D.

This document has not been received from the author.

TN-93-00326

TDR-RELATED

Lissauer, D.

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TN-93-00326

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Lissauer, D.

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TN-93-00327

TDR-RELATED

Lissauer, D.

This document has not been received from the author.

TN-93-00328

TDR-RELATED

Lissauer, D.

This document has not been received from the author.

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Document Number Index w/Abstract

TN-93-00329

TDR-RELATED

Lissauer, D.

This document has not been received from the author.

TN-93-00330

03/04/93

Results of Tests of the Dubna CSC Prototype at the TTR

This document has not been received from the author.

TN-93-00331

03/04/93

Testing and Developing the Extended Range Straightness Monitor

Goodwin, D.

Paradiso, Joseph

This document has not been received from the author.

TN-93-00332

03/05/93

Physics Efficiency and Background Reduction for GEM Level 1 Trigger Criteria

McFarlane, Kenneth

Uijterwaal, Henk

This document has not been received from the author.

TN-93-00333

03/05/93

Alignment Requirements for the GEM Muon System

Mitselmakher, G.

Ostapchuk, A.

This document has not been received from the author.

TN-93-00334

03/05/93

Background Muons for Alignment of the GEM Muon System

Ostapchuk, Andrey

This document has not been received from the author.

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Document Number Index w/Abstract

TN-93-00335 02/05/93

Sagitta Measurement Error and Cost

Sawicki, R.

This document has not been received from the author.

TN-93-00336 12/18/92

GEM Muon System Alignment Meetings - SSCL

This document has not been received from the author.
Two different document dates, 12/18/92 and 1/6/93.

TN-93-00337 09/23/92

Laser Alignment Monitor Capabilities

Sawicki, R.

This document has not been received from the author.

TN-93-00338 03/05/93

Muon Chamber Alignment Alternatives

Sawicki, R.

This document has not been received from the author.

TN-93-00339 03/30/92

Precision Alignment Capabilities at LLNL

Bliss, E.

Griffith, L.

Sawicki, R.

This document has not been received from the author.

TN-93-00340 09/01/92

Iarocci Tube Radiography

Sawicki, R.

This document has not been received from the author.

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Document Number Index w/Abstract

TN-93-00341

09/22/92

Muon/Magnet Alignment Meeting Notes

Sawicki, R.

This document has not been received from the author.

TN-93-00342

07/21/92

Results of Stretched Wire Capacitive Pickup Tests at LLNL

Ables, Eldon

This document has not been received from the author.

TN-93-00343

Parameterizing the GEM Central Tracker for GEMFAST

Wenaus, Torre

This document has not been received from the author.

TN-93-00344

03/01/93

GEANT Monte Carlo of High Energy Electron/Pion Discrimination Using a Silicon Preradiator

Clemen, Mark

Russ, Jim

The Electron/Pion discrimination in a Silicon Preradiator is investigated for use in a high energy environment. We model both silicon detector strips and pads, and investigate the use of longitudinal and lateral shower cuts. The longitudinal information is of less importance at very high energies than the lateral information.

TN-93-00345

03/08/93

Neutron and Gamma Sensitivity of RDT Filled by Various Gases

Gavrilov, Vladimir

This document has not been received from the author.

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TN-93-00346

02/24/93

GEM Electronics Design Review - SSCL

Agenda, attendees, and presentations of the GEM Electronics Design Review Meeting held at the SSC Laboratory on February 24, 1993. Goals are to present the design requirements, conceptual design, R&D issues and preliminary cost, schedule and manpower/resource plans for the GEM electronics subsystem to GEM management and selected outside reviewers. The presentations and review should be a midcourse correction for the GEM TDR.

TN-93-00347

02/24/93

Reviewers Report: GEM Electronics Design Review

Farr, W.
Lecomte, P.
Radeka, V.

The one day review consisted of 20 presentations followed by a discussion between the three reviewers, D. Marlow, and G. Sanders. This note summarizes this discussion. The amount of information presented by the 20 speakers was such that we cannot comment on each subject. We have concentrated on catching possible problem areas and are thus not commenting on many items we feel to be well under control. Obviously, such a report reflects the personal bias, as well as the experience of the reviewers: some of our comments may not be valid or difficult to implement in the SSC environment.

TN-93-00348

02/18/93

Engineering Elements of the Muon Alignment System

Sawicki, R.

This document has not been received from the author.