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Manuel I. Martin

Objective

To join a University to teach one or more subjects and to continue conducting research in experimental high energy particle physics.

Personal

Born 1940 in Cáceres, España. Educated in Barcelona, España.
US citizen.

Education

1996 Universidad de Zaragoza Zaragoza, España
Doctor of Philosophy (Ph.D.)

- **Thesis:** "Measurement of the Angular Distribution of the electron from the W Decay into $e + \nu$, in ppbar at $\sqrt{s} = 1.8\text{TeV}$ as function of P_t^W "
- **Advisor:** Dr. Bruno Gobbi, Professor at Northwestern University, Evanston, Illinois USA.
- **Note:** I needed to take some extra postgraduate courses in order to bring my knowledge to the modern thinking in Physics (my previous postgraduate work was done 25 years earlier). Although I needed to take final exams at U. of Zaragoza, I attended classes at Northwestern U. and took special courses at Fermilab.

1967 Universidad de Barcelona Barcelona, España
M.A. in Physics

Note: During the years 1961-1965 I attended also the E.T.S.I.I.B.

Note: During the years 1964-1967 I was in charge of the "Laboratorio de Electrónica" of the "Instituto de Física Teórica" at the U. of Barcelona directed by Dr. Luis M^a Garrido.

Experience

1980–present Fermi Nat. Laboratory Batavia, IL
Senior Electronic Engineer

(Because my work at Fermilab is very diversified I will break it down by dates and responsibilities)

1996 -present Senior Electronic Engineer for the DØ Experiment

Responsible for the Collector/Broadcaster System of the Trigger for the DØ Detector Upgrade. This crucial part of the Trigger truncates and

formats the data acquired by the Central Scintillating Fiber Tracker, Central PreShower and Forward PreShower detectors. The following are indicators of the complexity of the task: data is acquired at the rate of 1Tb/s, events take place every 132ns and the Collector/Broadcaster reduces this data by a factor of $\approx 50,000$ in less than 700ns. This modified information is used by the Triggers.

My responsibilities include but are not limited to:

- Coordinating the efforts of physicists and engineering teams from four Universities and Fermilab.
- Providing necessary input regarding to what is/is_not possible in the implementation of the Trigger using the existing Data Acquisition.
- Providing a leadership role in the definition of L1 and L2 Trigger Terms. In such capacity, I was able to expand the possibilities of the L1 Trigger improving its efficiency/rejection factor.
- Defining the protocols used for data transfers from the Digital Front End boards to the L1, L2 and L3 Trigger Frameworks.
- Defining the type of transmission media used among elements of the Trigger: LVDS, Fiber Optics, etc.
- Creating the algorithms used to format/truncate data at the different stages of the Collector/Broadcaster System. This step is crucial for proper function of all Triggers.
- Organizing VHDL classes.
- Teaching electronics emphasizing digital circuits, Boolean algebra and Finite State Machines' implementation in FPGAs.

I also

- Provide leadership in the application of "Bayesian" methods for calculation of probabilities (following H. Jeffreys, E.T. Janes, L. Bretthorst , et.) and confidence limits in $D\phi$ studies.
- Work as co-advisor for a Ph.D. candidate whose thesis work at $D\phi$ was a continuation of my own using about ten times more data.

1992 -1996

50% of the time was dedicated to my duties as a Fermilab employee and 50% as a graduate student pursuing a Ph.D. degree in experimental physics. Because of the type of work done at $D\phi$ my two roles often overlapped. Some of my efforts during this time were to:

- Modify the MC package generally used at $D\phi$ to reflect the NLO calculations done by E. Mirkes in the angular distribution of leptons from W and Z decays. This package has been used since then in all $D\phi$ calculations and its effect is reflected in the precise measurements of the W mass and width published by the $D\phi$ collaboration.
- Develop a new algorithm to calculate QCD background as function of the Pt of the decaying particle. With minor modifications, this method

is used in many analyses at DØ.

- Pioneer the usage of "Bayesian" probability. To my knowledge, I was the first to apply this in a Ph.D. dissertation. Since then the method has been used in several analysis.
- Working on the first stages of the Si Tracker:
 - calculated the minimum requirements for power consumption
 - calculated the minimum requirements for cooling
 - designed the first architecture for the data acquisition.After many tries, my original design with minor changes has been adopted.
- Design the electronics for a prototype detector/tracker using straws.
- Attend postgraduate courses at Northwestern University (Evanston, Illinois)

1985 -1992

In 1985 I joined the DØ experiment as Sr. Engineer with the responsibility of designing, testing, building and commissioning the Data Acquisition System for the Central Detector of DØ.

These responsibilities included but were not limited to:

- Directing the efforts of a team of physicists and engineers from Fermilab, SACLAY (France) and two universities in the design of electronic modules.
- Designing the architecture of the Data Acquisition System. The system has 460 digital boards (9U * 400mm) and 230 analog boards (9U * 400mm). It handled 1TB of data per second. (NOTE.- Through the live of the system only 6 boards needed to be replaced!).
- Specifying the Global Clock System (the CLK used through all electronic packages of the DØ detector.
- Acting as liaison between Fermilab and Sony Corporation (Japan) to modify a Sony part (100MHz ADC) in order to meet DØ requirements of speed, accuracy and linearity.
- Designing a high bandwidth (200-300 MHz), bilinear amplifier to extend the dynamic range of the ADC from 8 to 9 bits.
- Creating algorithms to sparsify data. Such algorithms were implemented in high speed/high density Gate Arrays.

1980 -1985

Senior Electronic Engineer for the Accelerator Division

Project Leader for the Temperature Controls of the Tevatron. Assistant Group Leader for the Electrical Engineering group of the Accelerator Division. My responsibilities included but were not limited to:

- Reorganizing the EE group according to well-established managerial

practices in the industry.

- Designing the electrical/electronic system to control the temperature of the Tevatron's superconductive magnets to 5.2°K. I created a Distributed Intelligent System consisting of 28 microprocessors and a mainframe to do the job, and in doing so I introduced the concept to Fermilab.
- Developing multi closed loop control algorithms using z-transform.
- Developing a high-level task-oriented language aimed at easy control of sophisticated valves using the aforementioned algorithms.
- Creating software packages (using FORTRAN) to handle the day to day business of the EE group. These included: reporting forms, purchasing forms, QA and QC forms and protocols.

1968 -1980 Work in Industry

I started working as a Junior Design Engineer (Victor Comptometer) in July, 1968 and moved through the ranks of different companies up to General Manager of the RIA Subsidiary of Technicon. In 1980 I left a very lucrative career to work in an environment close to my primary love: Physics. I will provide pertinent details upon request.

References

Available upon request.

Note

You can get an idea of my present work at DØ (Fermilab) by visiting my Web Site at <http://d0server1.fnal.gov/users/manuel/>

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Manuel I. Martin

PUBLICATIONS

$D\bar{0}$ Papers (Published)

1. *Beam Tests of the D0 Uranium Liquid Argon End Calorimeter (whole-collab. paper)*
Nucl. Instr. and Methods, A324, 53 (1993)
FERMILAB-PUB-92/162
2. *The D0 Detector ("The NIM paper")*
Nucl. Instr. and Methods, A338, 185 (1994)
FERMILAB-PUB-93/179
3. *First Generation Leptoquark Search in pbarp Collisions at sqrt s = 1.8 TeV*
Phys. Rev. Letters {72} 965 (1994)
FERMILAB PUB-93/340
4. *Search for the Top Quark in pbarp Collisions at sqrt s = 1.8 TeV*
Phys. Rev. Letters {72} 2138 (1994)
FERMILAB PUB-94/004
5. *Rapidity Gabetween Jets in pbarp Collisions at sqrt s = 1.8 TeV*
Phys. Rev. Letters {72} 2332 (1994)
FERMILAB PUB-94/005
6. *Search for High Mass Top Quark Production in pbarp Collisions at sqrt s = 1.8 TeV*
Phys. Rev. Letters {74} 2422 (1995)
FERMILAB PUB-94/354
7. *Inclusive mu and b-Quark Production Cross Sections in pbarp Collisions at sqrt s = 1.8 TeV*
Phys. Rev. Letters {74} 3548 (1995)
FERMILAB PUB-94/409
8. *Observation of the Top Quark*

Phys. Rev. Letters {74} 2632 (1995) http://www-d0.fnal.gov/www_buffer/pub/pub_007.pdf,
FERMILAB PUB-95/028-E

http://www-d0.fnal.gov/www_buffer/pub/pub007_top_observation.ps

9. *Limits on the Anomalous ZZgamma and Zgammagamma Couplings in pbarp Collisions at sqrt s = 1.8 TeV*
Phys. Rev. Letters {75} 1028 (1995) ,
FERMILAB PUB-95/042-E http://www-d0.fnal.gov/www_buffer/pub/pub008_zgamma1.ps
10. *Search for W Boson Pair Production in pbarp Collisions at sqrt s = 1.8 TeV*
Phys. Rev. Letters {75} 1023 (1995),
FERMILAB PUB-95/044-E http://www-d0.fnal.gov/www_buffer/pub/pub009_ww_dilepton1.ps
11. *Search for Squarks and Gluinos at sqrt s = 1.8 TeV*
Phys. Rev. Letters {75} 618 (1995)
FERMILAB PUB-95/057-E http://www-d0.fnal.gov/www_buffer/pub/pub010_squark_gluino1.ps
12. *Transverse Energy Distributions within Jets in pbarp Collisions at 1.8 TeV*
Phys. Letters {B357} 500 (1995)
FERMILAB PUB-95/203-E http://www-d0.fnal.gov/www_buffer/pub/pub011_jet_shape.ps
13. *A Study of the Strong Coupling Constant Using W + Jets Processes*
Phys. Rev. Letters {75} 3226 (1995)
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14. *Second Generation Leptoquark Search in pbarp Collisions at 1.8 TeV*
Phys. Rev. Letters {75} 3618 (1995)
FERMILAB PUB-95/185-E http://www-d0.fnal.gov/www_buffer/pub/pub015_leptoquark_2gen.ps
15. *Measurement of the WWgamma Gauge Boson Couplings in pbarp Collisions at sqrt s = 1.8 TeV*
Phys. Rev. Letters {75} 1034 (1995)
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16. *W and Z Boson Production in pbarp Collisions at sqrt s = 1.8 TeV*
Phys. Rev. Letters {75} 1456 (1995)
FERMILAB PUB-95/130-E http://www-d0.fnal.gov/www_buffer/pub/pub017_wz_xs.ps

17. *Top Quark Search with the D0 1992-1993 Data Sample*
Phys. Rev. D{52} 4877 (1995)
FERMILAB PUB-95/020-E http://www-d0.fnal.gov/www_buffer/pub/pub018_top_search_prd.ps
18. *Studies of Topological Distributions of Inclusive Three- and Four- Jet Events in pbarp Collisions at sqrt s = 1800 GeV with the D0 Detector*
Phys. Rev. D53, 6000 (1996)
FERMILAB-PUB-95/296-E http://www-d0.fnal.gov/www_buffer/pub/pub020_jet_topology.ps
19. *Search for Wino1 Zino2 via Trilepton Final States in pbarp Collisions at sqrt s = 1.8 TeV*
Phys. Rev. Letters {76} 2228 (1996)
FERMILAB-PUB-95/385-E http://www-d0.fnal.gov/www_buffer/pub/pub021_gaugino_search.ps
20. *The Azimuthal Decorrelation of Jets Widely Separated in Rapidity*
Phys. Rev. Letters {77} 595 (1996)
FERMILAB-PUB-96/038-E http://www-d0.fnal.gov/www_buffer/pub/pub022_jet_decorrelation.ps
21. *Jet Production via Strongly-Interacting Color-Singlet Exchange in pbarp Collisions*
Phys. Rev. Lett. {76} 734 (1996)
FERMILAB PUB-95/302-E http://www-d0.fnal.gov/www_buffer/pub/pub023_color_singlet.ps
22. *Search for Right-Handed W Bosons and Heavy W' in pbarp Collisions at sqrt s = 1.8 TeV*
Phys. Rev. Letters {76} 3271 (1996)
FERMILAB PUB-95/412-E http://www-d0.fnal.gov/www_buffer/pub/pub027_w_right.ps
23. *Search for Heavy W Bosons in 1.8 TeV pbarp Collisions*
Phys. Letters {B358} 405 (1995)
FERMILAB PUB-95/283-E http://www-d0.fnal.gov/www_buffer/pub/pub029_wprime1.ps
24. *Search for Anomalous WW and WZ Production in pbarp Collisions at sqrt s=1.8 TeV*
Phys. Rev. Letters {77} 3303 (1996).
FERMILAB-PUB-96/115-E http://www-d0.fnal.gov/www_buffer/pub/pub030_wwejet.ps
25. *J/Psi Production in pbarp Collisions at sqrt s = 1.8 TeV*
Physics Letters {B370} 239 (1996).
FERMILAB-PUB-96/003

26. *Search for Light Top Squarks in $p\bar{p}$ Collisions at 1.8 TeV*
Phys. Rev. Letters 76, 2222 (1996)
FERMILAB-PUB-95/380
27. *Measurement of the W Boson Mass*
Phys. Rev. Letters 77, 3309 (1996).
FERMILAB-PUB-96/177
28. *Search for Additional Neutral Gauge Bosons*
Phys. Lett. B 385, 471 (1996)
FERMILAB-PUB-96/187
29. *The Isolated Photon Cross Section in the Central and Forward Rapidity Region in $p\bar{p}$ Collisions at $\sqrt{s} = 1.8$ TeV*
Phys. Rev. Letters {77}, 5011, (1996).
FERMILAB-PUB-96/072
30. *Search for a Fourth Generation Charge $-1/3$ Quark via Flavor Changing Neutral Current Decay*
Phys. Rev. Letters {78} 3818 (1997) [↓](#).
FERMILAB-PUB-96/430-E, hep-ex/9611021
31. *Search for Diphoton Events with Large Missing Transverse Energy in $p\bar{p}$ Collisions at $\sqrt{s} = 1.8$ TeV*
Phys. Rev. Letters {78} 2070 (1997).
FERMILAB-PUB-96/446-E, hep-ex/9612011
32. *Limits on Anomalous $WW\gamma$ Couplings from $p\bar{p} \rightarrow W\gamma + X$ Events at $\sqrt{s} = 1.8$ TeV*
Phys. Rev. Lett. 78, 3634 (1997)
FERMILAB-PUB-96/434-E, hep-ex/9612002
33. *Search for Top Squark Pair Production in the Dielectron Channel*
Phys. Rev. D 57, 589 (1998)
FERMILAB-PUB-96/449-E, hep-ex/9612009
34. *Study of the ZZg and Zgg Couplings in $Z(\nu\nu)g$ Production.*
Phys. Rev. Letters 78, 3640 (1997)
FERMILAB PUB-97/047-E, hep-ex/9702011
35. *Direct Measurement of the Top Quark Mass.*
Phys. Rev. Letters {79} 1197 (1997)
Fermilab-Pub-97/059-E, hep-ex/9703008

36. *Studies of Gauge Boson Pair Production and Trilinear Couplings.*
Phys. Rev. D56, 6742 (1997)
Fermilab-Pub-97/088-E, hep-ex/9704004
37. *Measurement of the Top Quark Pair Production Cross Section in $p\bar{p}$ Collisions.*
Phys. Rev. Letters {79} 1203 (1997) [..](#),
Fermilab-Pub-97/109-E, hep-ex/9704015
38. *Limits on WWZ and WW γ couplings from $p\bar{p} \rightarrow e \nu j j X$ events at $\sqrt{s} = 1.8$ TeV*
Phys. Rev. Letters {79} 1441 (1997)
FERMILAB PUB-97/136-E, hep-ex/9705010
39. *Search for the Trilepton Signature from Associated Gaugino Pair Production.*
Phys. Rev. Letters {80} 1591 (1998)
FERMILAB PUB-97/153-E, hep-ex/9705015
40. *Color Coherent Radiation in Multijet Events from $p\bar{p}$ Collisions at $\sqrt{s} = 1.8$ TeV.*
Phys. Lett. B {414} 419 (1997)
FERMILAB PUB-97/201-E, hep-ex/9706012
41. *Measurement of the Top Quark Mass Using Dilepton Events.*
Phys. Rev. Letters {80} 2063 (1998)
FERMILAB PUB-97/172-E, hep-ex/9706014
42. *Measurement of Dijet Angular Distributions and Search for Quark Compositeness.*
Phys. Rev. Letters {80} 666 (1998)
FERMILAB PUB-97/237-E, hep-ex/9707016
43. *Search for Scalar Leptoquark Pairs Decaying to Electrons and Jets in $p\bar{p}$ Collisions.*
Phys. Rev. Letters {79} 4321 (1997)
FERMILAB PUB-97/252-E, hep-ex/9707033
44. *Experimental Search for Chargino and Neutralino Production in Supersymmetry Models with a Light Gravitino.*
Phys. Rev. Letters {80} 442 (1998)
FERMILAB PUB-97/273-E, hep-ex/9708005
45. *Determination of the Mass of the W Boson Using the D0 Detector at the Tevatron.*
Phys. Rev. D {58} 12002 (1998)
FERMILAB PUB-97/328-E, hep-ex/9710007
46. *Z γ Production in $p\bar{p}$ Collisions at $\sqrt{s} = 1.8$ TeV and Limits on Anomalous ZZ γ and Z γ γ Couplings.*

- Phys. Rev. D {57} 3817 (1998)
FERMILAB PUB-97/363-E, hep-ex/9710031
47. *Search for First Generation Scalar Leptoquark Pairs in $p\bar{p}$ Collisions at $\sqrt{s} = 1.8$ TeV.*
Phys. Rev. Letters {80} 2051 (1998)
FERMILAB PUB-97/344-E, hep-ex/9710032
48. *A Measurement of the W Boson Mass at the Fermilab $p\bar{p}$ Collider.*
Phys. Rev. Letters {80} 3008 (1998)
FERMILAB PUB-97/423-E, hep-ex/9712028
49. *Zgamma Production in $p\bar{p}$ Collisions at $\sqrt{s}=1.8$ TeV and Limits on Anomalous ZZgamma and Zgammagamma Couplings.*
Phys. Rev. D {57} 3817 (1998)
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50. *Direct Measurement of Top Quark Mass by the D0 collaboration.*
Phys. Rev. D {58} 052001 (1998)
FERMILAB PUB-98/031-E, hep-ex/9801025
51. *Search for the Decay $b \rightarrow s \mu \mu$.*
Physics Lett. B423, 419 (1998)
FERMILAB PUB-98-033-E, hep-ex/9801027
52. *Measurement of the Shape of the Transverse Momentum Distribution of W Bosons Produced in $p\bar{p}$ Collisions at $\sqrt{s} = 1.8$ TeV .*
Physics Rev. Lett. {80} 5498 (1998)
FERMILAB PUB-98-075-E, hep-ex/9803003
53. *Limits on WWgamma and WWZ Couplings from W Boson Pair Production.*
Phys. Rev D58, Rapid Communications 051101 (1998)
FERMILAB PUB-98-076-E, hep-ex/9803004
54. *Search for Charge 1/3 Third Generation Leptoquarks in $p\bar{p}$ Collisions at $\sqrt{s}=1.8$ TeV.*
Phys. Rev Lett. {81} 38 (1998)
FERMILAB PUB-98-081-E, hep-ex/9803009
55. *Limits on Anomalous WWg and WWZ Couplings.*
Phys. Rev. D Rapid Communications {D58} 31102 (1998)
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56. *Search for Heavy Pointlike Dirac Monopoles.*
Phys. Rev. Lett. {81} 524 (1998)
FERMILAB PUB-98-095-E, hep-ex/9803023
57. *Determination of the Absolute Jet Energy Scale in the D0 Calorimeters.*
Nuclear Instruments and Methods A424, 352 (1999)
FERMILAB PUB-97/330-E, hep-ex/9805009
58. *The Dijet Mass Spectrum and a Search for Quark Compositeness in pbarp Collisions at $\sqrt{s} = 1.8$ TeV.*
Phys. Rev. Lett. {82} 2457 (1999)
FERMILAB PUB-98/220-E, hep-ex/9807014
59. *The Inclusive Jet Cross Section in pbarp Collisions at $\sqrt{s} = 1.8$ TeV.*
Phys. Rev. Lett. {82} 2451 (1999)
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60. *Small Angle J/Psi Production in pbarp Collisions at $\sqrt{s}=1.8$ TeV.*
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FERMILAB PUB-98/237-E, hep-ex/9807029
61. *Measurement of the Top Quark Mass in the Dilepton Channel.*
Phys. Rev D {60} 052001 (1999)
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62. *Search for Squarks and Gluinos in Single-Photon Events with Jets and Large Missing Transverse Energy in pbarp Collision at $\sqrt{s}=1.8$ TeV.*
Phys. Rev. Lett. {82} 29 (1999)
FERMILAB PUB-98/243-E, hep-ex/9808010
63. *Measurement of the Top Quark Pair Production Cross Section in pbarp Collisions using Multijet Final States.*
Phys. Rev. D {60} 012001 (1999)
FERMILAB PUB-98/130-E, hep-ex/9808034
64. *Probing Hard Color-Singlet Exchange in pbarp Collisions at $\sqrt{s}=630$ GeV and 1800 GeV.*
Phys. Lett. B {440} 189 (1998)
FERMILAB PUB-98/285-E, hep-ex/9809016
65. *Search for nonstandard Higgs bosons using high mass photon pairs in pbarp \rightarrow $\gamma\gamma + 2$ jets at $\sqrt{s} = 1.8$ TeV.*
Phys. Rev Lett. {82} 2244 (1999)
FERMILAB PUB-98/362-E, hep-ex/9811029
66. *Measurement of the High-Mass Drell-Yan Cross Section and Limits on Quark-*

Electron Compositeness Scales.
Phys. Rev. Lett. {82} 4769 (1999)
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67. *Measurement of the top quark pair production cross section using all jets decay channel.*
Phys. Rev. Lett. {83} 1908 1999
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68. *Search for Squarks and Gluinos in Events Containing Jets and a Large Imbalance in Transverse Momentum.*
Phys. Rev. Lett. {83}, 4937 (1999).
FERMILAB PUB-98/402-E, hep-ex/9902013

69. *Measurement of W and Z boson production cross sections (Run Ia).*
Phys. Rev. D. {60} 052003 1999
FERMILAB PUB-99/015-E, hep-ex/9901040

70. *Search for Charged Higgs Bosons in Decays of Top Quark Pairs.*
Phys. Rev. Lett. {82} 4975 (1999)
FERMILAB PUB-99/029-E, hep-ex/9902028

71. *Search for bottom squarks in pbarp collisions at sqrt(s)= 1.8 TeV.*
Phys. Rev. D Rapid Comm. {60} 031101 (1999)
FERMILAB PUB-99/046-E, hep-ex/9903041

72. *Search for Second Generation Leptoquark Pairs Decaying to mu+nu+jets in pbarp collisions at sqrt(s)= 1.8 TeV.*
Phys. Rev. Lett. {83}, 2896 1999
FERMILAB PUB-99/123-E, hep-ex/9904023

73. *Studies of WW and WZ Production and Limits on Anomalous WWgamma and WWZ Couplings.*
Phys. Rev. D {60} 072002 (1999)
FERMILAB PUB-99/139-E, hep-ex/9905005

74. *Measurement of the inclusive differential cross section for Z bosons as a function of transverse momentum produced in pbar{p} collisions at sqrt{s}=1.8 TeV*
Phys. Rev. D {61}, 032004 (2000)
FERMILAB PUB-99/197-E, hep-ex/9907009

75. *Search for R-parity Violating Supersymmetry in the Dielectron Channel*
Phys. Rev. Lett. {83}, 4476 (1999).
FERMILAB PUB-99/200-E, hep-ex/9907019

76. *Evidence of Color Coherence Effects in W +Jets Events from $p\bar{p}$ Collisions at $\sqrt{s}=1.8$ TeV*
Phys. Lett. B {464}, 145 (1999).
FERMILAB PUB-99/224-E, hep-ex/9908017
77. *A measurement of the W boson mass using electrons at large rapidities*
Phys. Rev. Lett. {84}, 222 (2000)
FERMILAB PUB-99/259-E, hep-ex/9909030

* **$D\Phi$ Papers (Accepted)**

1. *Extraction of the Width of the W Boson from Measurements of $\sigma(p\bar{p}\rightarrow W+X)*B(W\rightarrow e+\nu)$ and $\sigma(p\bar{p}\rightarrow Z+X)*B(Z\rightarrow ee)$ and their Ratio*
Phys. Rev. D {xx} pppp 1999
FERMILAB PUB-99/171-E, hep-ex/9906025
2. *Differential production cross section of Z bosons as a function of transverse momentum at $\sqrt{s}=1.8$ TeV*
Accepted for pub in Phys. Rev. Lett. {xx} pppp (2000)
3. *Search for Second Generation Leptoquarks in $p\bar{p}$ Collisions at $\sqrt{s}=1.8$ TeV*
Accepted by Phys. Rev. Lett. {xx}, pppp (2000)
FERMILAB PUB-99/314-E, hep-ex/9910040
4. *The Isolated Photon Cross Section in $p\bar{p}$ Collisions at $\sqrt{s}=1.8$ TeV*
Accepted for pub in Phys. Rev. Lett. {xx} pppp (2000)
FERMILAB PUB-99/354-E, hep-ex/9912017

** **$D\Phi$ Papers (Submitted)**

1. *The b - \bar{b} Production Cross Section and Angular Correlations in p - \bar{p} Collisions at $\sqrt{s} = 1.8$ TeV.*
Submitted to Phys. Rev. Lett. {xx} pppp 1999
2. *A measurement of the W boson mass using large rapidity electrons*
Submitted to Phys. Rev. D {xx} pppp 1999
FERMILAB PUB-99/237-E, hep-ex/9908057
3. *Probing BFKL Dynamics in Dijet Cross Section at Large Rapidity Intervals in $p\bar{p}$ Collisions at $\sqrt{s} = 1800$ and 630 GeV*

Submitted to Phys. Rev. Lett. {xx} pppp 1999
FERMILAB PUB-99/363-E, hep-ex/9912032

4. *Limits on Anomalous WWgamma and WWZ Couplings from WW/WZ ->evjj Production*
Submitted to Phys. Rev. D {xx} pppp 1999
hep-ex/9912033
5. *A measurement of the W->tau nu Production Cross Section in pbarp Collisions at Sqrt(s)=1.8 TeV*
Submitted to Phys. Rev. Lett. {xx} pppp 1999
FERMILAB-Pub-99/373-E, hep-ex/9912065.
6. *Limits on Quark Compositeness from High Energy Jets in pbarp Collisions at 1800 GeV*
Submitted to Phys. Rev. Lett. {xx} pppp 1999
FERMILAB-Pub-99/357-E, hep-ex/9912023
7. *A Search for Dilepton Signature from Minimal Low-energy Supergravity pbarp Collisions at 1800 GeV*
Submitted to Phys. Rev. Lett. {xx} pppp (2000)
FERMILAB-Pub-00/042-E, hep-ex/9907048v2

Other Papers (non DØ)

(Note:- This list is unfortunately incomplete)

1. *Quasi-Optimal Algorithms for the Control Loops of the Fermilab Energy Saver Satellite Refrigerator*
IEE Transactions on Nuclear Science, Aug. 1983
2. *Operation of the Tevatron Satellite Refrigerators for 0.75 and 2.0 Km long Magnet Strings*
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3. *The Design of a Hardware Testing System for the D Zero Detector*
1991 IEEE Nuclear Science Symposium,
4. *A TRD Trigger for the Tevatron Collider Experiment at DØ*
1991 IEEE Nuclear Science Symposium,
5. *A Working, VME-based, 106MHz FADC Data Acquisition System for the Tracking Detectors at DØ*
1996 IEEE Nuclear Science Symposium,
6. *A Tracking System for DØ Upgrade based on MicroStrips Gas Chambers*

Performance of 2mm Radius Tube Drift Cells

7. *A Fast, First Level, R0, Hardware Trigger for the D0 Central Fiber Tracker using Field Programmable Gate Arrays*
1996 IEEE Nuclear Science Symposium,

Many other internal publications. Some of them are listed under DØ Notes in my Web pages : <http://d0server1.fnal.gov/users/manuel/>

Other Achievements.-

- Presently I am a member of the “Electrical Safety Standards for Fermilab” Committee.
- During my years at Fermilab I served in several committees and Engineering Review Panels.
- Attended and participated in many Workshops which shaped the hardware and software used at DØ as well as the direction that the DØ Collaboration will take in the future.