

JOHN A. POIRIER**EMERITI PROFESSOR OF PHYSICS****TENURED****AT NOTRE DAME
SINCE 1964****BORN:** May 15, 1932**AT:** Lewistown, Montana

University of Notre Dame; 1954; B.S.
 Stanford University; 1955; M.S.
 Stanford University; 1959; Ph.D.

NSF Predoctoral Fellowship, September 1954-1956
 Lawrence Radiation Laboratory, January, 1959-1963
 Lecturer, University of California at Berkeley and Staff Physicist, 1961-1963
 NSF Postdoctoral Fellow at CERN, Switzerland, May, 1963-1964
 Associate Professor, University of Notre Dame, 1964-1969
 Professor, University of Notre Dame, 1969-present

Honors

Invited to submit proposals for the 1999 Nobel Prize in Physics by the Nobel Committee for Physics on behalf of the Royal Swedish Academy of Sciences.

Research Area:

Astrophysics
 Cosmic Rays
 Experimental research in high energy elementary particle physics

Invited Addresses:

American Physical Society, Mexico City, Mexico, August, 1966.
 University of Michigan, Ann Arbor, Michigan, December, 1967.
 Lawrence Radiation Laboratory, Berkeley, California, Sept. 1967.
 Stanford Linear Accelerator Center, Stanford, California, July, 1967.
 University of Illinois, Urbana, Illinois, November, 1968.
 Ohio State University, Columbus, Ohio, May, 1969.
 Argonne National Laboratory, October, 1971.
 Third International Conference on Experimental Meson Spectroscopy, April, 1972.
 Purdue University, West Lafayette, Indiana, 1972.
 XVI International Conference on High Energy Physics, Chicago, Batavia, Illinois, September, 1972.
 Michigan State University, East Lansing, Michigan, September, 1973.
 XVII International Conference on High Energy Physics, London, July, 1974.
 Montana State University, Bozeman, Montana, March, 1979.
 Illinois Benedictine College, Lisle, Illinois, February, 1980.
 XII International Symposium on Multiparticle Dynamics, Notre Dame, Indiana, June, 1981.
 University of Maryland, College Park, Maryland, October, 1981.
 Montana State University, Bozeman, Montana, November, 1981.

University of Notre Dame, Notre Dame, Indiana, September, 1986.
University of Rochester, Rochester, NY, June, 1987.
20th International Cosmic Ray Conference, Moscow, August, 1987.
GRANA Subcommittee Meeting of HEPAP, Baltimore, Maryland, April, 1988.
Cosmic Ray Cascade Simulation Workshop, University of Utah, Salt Lake City, UT,
March 2, 1989.
Workshop on the Physics and Experimental Techniques of High Energy Neutrino and VHE
and UHE Gamma-Ray Particle Astrophysics, University of Arkansas, Little Rock, AK,
May 10, 1989.
Chaired Session at Workshop on the Physics and Experimental Techniques of High Energy
Neutrino and VHE and UHE Gamma-Ray Particle Astrophysics, University of Arkansas,
Little Rock, AK, May 13, 1989.
21st International Cosmic Ray Conference, Adelaide, Australia, January 1990.
Workshop on Gamma Ray Astronomy Observations, Adelaide, Australia, January 1990.
22nd International Cosmic Ray Conference, Dublin, Ireland, August 1991.
Seventh International Symposium on Very High Energy Cosmic Ray Interactions, University
of Michigan, Ann Arbor, MI, June 1992.
23rd International Cosmic Ray Conference, Calgary, Canada, July 29, 1993.
Workshop on the Study of Cosmic Ray Interactions with New Extensive Air Shower Arrays,
Calgary, Canada, July 29, 1993.
24th International Cosmic Ray Conference, Rome, Italy, August 1995.
Keynote Address at the Annual Joint Meeting of the Northern Indiana Astronomical Group
Astronomy Convention and the Great Lakes Region Astronomical League Annual Meeting,
Camp Crosley, North Webster, Indiana, April 26-27, 1996.
Workshop on Tuning and Tracking Measurements in the Study of Extensive Air Shower
Longitudinal Development, Durban, South Africa, July 29, 1997.
25th International Cosmic Ray Conference, Durban, South Africa, July 30 - August 6, 1997.
26th International Cosmic Ray Conference, Salt Lake City, Utah, August 17-25, 1999.
27th International Cosmic Ray Conference, Hamburg, Germany, August 7-15, 2001.
Texas A&M University, College Station, Texas, April 17, 2002.

List of Scientific Publications

1. "Scattering of 200-MeV Positrons by Electrons," John A. Poirier, D.M. Bernstein, and Jerome Pine, Phys. Rev. 117, 557(1960); 121, 1863 (1961).
2. "Test of Isotopic Spin Conservation from an Experimental Limit on $\sigma(d+d \rightarrow He^4 + \pi^0)$," John A. Poirier and Morris Pripstein, Phys. Rev. 122, 1917 (1961).
3. "Charge-Exchange Production of Antineutrons and their Annihilation in Hydrogen," C. Keith Hinrichs, Burton J. Moyer, John A. Poirier, and Philip Ogden, Phys. Rev. 127, 617 (1962).
4. "Total Absorption Scintillation Counter for High-Energy Photons," William C. Bowman, Jim B. Carroll, and John A. Poirier, Rev. Sci. Instr. 33, 741 (1962).
5. "Energy Spectrum of Electrons in the Outer Radiation Belt," W.N. Hess and J.A. Poirier, Journ. Geo. Res. 67, 1699 (1962).
6. "New Limit for Isotopic Spin Conservation in Strong Interactions from an Experimental Limit on $\sigma(d + d \rightarrow He^4 + \pi^0)$," John A. Poirier and Morris Pripstein, Phys. Rev. 130, 1171 (1963).
7. "Basic Theory and Application of Regge Poles," C. Edward Jones and John A. Poirier, UCRL-10677 (1963); (unpublished).
8. "Production and Asymmetric Decay of the ρ^0 and Its Relation to the Proposed ε^0 Scalar Meson," I. Derado, V.P. Kenney, J.A. Poirier, and W.D. Shephard, Phys. Rev. Letters 14, 872 (1965).
9. "Dipion Effective Mass Distributions for the π^-p Interaction at 8.09 GeV," I. Derado, V.P. Kenney, J.A. Poirier, W.D. Shephard, and E.H. Synn, Lectures in Theoretical Physics (University of Colorado Press) (1965), Vol. 8.
10. "Total and Differential Cross Sections for $\pi^-p \rightarrow \eta\eta$ From Threshold to 1300 MeV," W.B. Richards, J.A. Poirier, et al., Phys. Rev. Letters 16, 1221 (1966).
11. "Determination of an Upper Limit for the Partial Width $\Gamma(\rho\pi\gamma)$," G. Fidecaro, M. Fidecaro, J.A. Poirier, P. Schiavon, Phys. Letters 23, 163 (1966).
12. "Pion Production in π^0p Interactions at Energies 790, 830, and 870 MeV," N.M. Cason, I. Derado, J.W. Lamsa, V.P. Kenney, J.A. Poirier, W.D. Shephard (Notre Dame), and C.N. Vittitoe and J.L. Stautberg (Kentucky), Phys. Rev. 150, 1134 (1966).
13. I. Derado, V.P. Kenney, J.A. Poirier, W.D. Shephard, and Sr. E.M. Clinton, G.N.S.H., Proceedings of the 1966 International Conference on Instrumentation for High Energy Physics (Stanford University, 1966), p. 145.

14. "Evidence for Vector Meson Exchange in ρ^- Production at 8 GeV/c," I. Derado, J.A. Poirier, N.N. Biswas, N.M. Cason, V.P. Kenney, and W.D. Shephard, *Phys. Letters* 24B, 112 (1967).
15. "Total Pion-Pion Cross Sections for the 2 GeV Dipion Mass Region," N.N. Biswas, N.M. Cason, I. Derado, V.P. Kenney, J.A. Poirier, and W.D. Shephard, *Phys. Rev. Letters* 18, 273 (1967).
16. "Study of the $\pi\rho$ System in the Reaction $\pi^- + p \rightarrow \pi^- + \rho^0 + p$ at 8 GeV/c," N.M. Cason, J.W. Lamsa, N.N. Biswas, I. Derado, T.H. Groves, V.P. Kenney, J.A. Poirier, and W.D. Shephard, *Phys. Rev. Letters* 18, 880 (1967).
17. "Pion-Proton Charge-Exchange Scattering from 500 to 1300 MeV," Charles B. Chiu, Richard D. Eandi, A. Carl Helmholz, Robert W. Kenney, Burton J. Moyer, John A. Poirier, W. Bruce Richards, Robert J. Cence, Vincent Z. Peterson, Narendra K. Sehgal, and Victor J. Stenger, *Phys. Rev.* 156, 1415 (1967).
18. "The Reaction $\pi^-p \rightarrow \pi^- \pi^+ n$ at 8 GeV/c," J.A. Poirier, N.N. Biswas, N.M. Cason, I. Derado, V.P. Kenney, W.D. Shephard, E.H. Synn (Notre Dame), and H. Yuta, W. Selove, R. Ehrlich, and A.L. Baker (Pennsylvania), *Phys. Rev.* 163, 1462 (1967).
19. "Observation of the Reaction $\pi^-p \rightarrow \bar{p}n$ at 8 GeV/c," J.W. Andrews, N.N. Biswas, N.M. Cason, I. Derado, V.P. Kenney, J.A. Poirier, and W.D. Shephard, *Phys. Rev.* 163, 1502 (1967).
20. "R. S. and T Resonances Produced in 8 GeV/c π^-p Interactions," N.N. Biswas, N.M. Cason, T.H. Groves, V.P. Kenney, J.A. Poirier, and W.D. Shephard, Proceedings of the 1967 Athens Topical Conference on Resonant Particles (Ohio University, Athens, Ohio, 1967).
21. "Branching Ratio $\Gamma(\eta \rightarrow 3\pi^0)/\Gamma(\eta \rightarrow 2\gamma)$ Measured Using a 4 π Spark Chamber," R.J. Cence, V.Z. Peterson, V.J. Stenger, C.B. Chiu, R.D. Eandi, A.C. Helmholz, R.W. Kenney, B.J. Moyer, J.A. Poirier, and W.B. Richards, *Phys. Rev. Letters* 19, 1393 (1967); [20, 175 (1968) (E)].
22. "Resonances Produced in the Reaction $\pi^-p \rightarrow \pi^- \pi^- \pi^+ p$ at 8 GeV/c," J.W. Lamsa, N.M. Cason, N.N. Biswas, I. Derado, T.H. Groves, V.P. Kenney, J.A. Poirier, and W.D. Shephard, *Phys. Rev.* 166, 1395 (1968).
23. "Vector Dominance Model Comparison of π^+ Photoproduction with Production by Pions," R. Diebold and J.A. Poirier, *Phys. Rev. Letters* 20, 1532 (1968).
24. "Observation of a $\rho^- \rho^0$ Enhancement at 1710 MeV," N.N. Biswas, N.M. Cason, A.R. Dzierba, T.H. Groves, V.P. Kenney, J.A. Poirier, and W.D. Shephard, *Phys. Rev. Letters* 21, 50 (1968).

25. "The $K^0_1 K^0_1$ Threshold Enhancement in $\pi^-p \rightarrow K^0_1 K^0_1 n$ at 4 and 5 GeV/c," T.F. Hoang, D.P. Eartly, J.J. Phelan, A. Roberts, C.L. Sandler, S. Bernstein, S. Margulies, D.W. McLeod, T.H. Groves, N.N. Biswas, N.M. Cason, V.P. Kenney, J.M. Marraffino, J.T. McGahan, J.A. Poirier, and W.D. Shephard, Phys. Rev. Letters 21, 317 (1968).
26. "Low Energy π - π Phase Shifts from Coulomb Interference," N.N. Biswas, N.M. Cason, P.B. Johnson, V.P. Kenney, J.A. Poirier, W.D. Shephard, and R. Torgerson, Phys. Letters 27B, 513 (1968).
27. "Discrepancy Between the Vector-Dominance Model and Pion Production by Polarized Photons," R. Diebold and J.A. Poirier, Phys. Rev. Letters 22, 255 (1969).
28. "Compilation of π - p Data at 4 GeV/c: Backward Resonance Production and $\pi\pi$ Scattering," P.B. Johnson, J.A. Poirier, N.N. Biswas, N.M. Cason, T.H. Groves, V.P. Kenney, J.T. McGahan, W.D. Shephard et al., Phys. Rev. 176, 1651 (1968).
29. "Rotation of Frame and the Vector-Dominance Discrepancy for π^\pm Production by Polarized Photons," R. Diebold and J.A. Poirier, Phys. Rev. Letters 22, 906 (1969).
30. "Investigation of $\pi^-p \rightarrow K^0_1 K^0_1 n$ at 4 and 5 GeV/c," T.F. Hoang, D.P. Eartly, J.J. Phelan, A. Roberts, C.L. Sandler, S. Bernstein, S. Margulies, D.W. McLeod, T.H. Groves, N.N. Biswas, N.M. Cason, V.P. Kenney, J.M. Marraffino, J.T. McGahan, J.A. Poirier, and W.D. Shephard, Phys. Rev. 184, 1363 (1969).
31. "Reaction $\pi^-p \rightarrow \pi^-\pi^0 p$ at 8 GeV/c," S.J. Barish, W. Selove, N.N. Biswas, N.M. Cason, P.B. Johnson, V.P. Kenney, J.A. Poirier, W.D. Shephard, and H. Yuta, Phys. Rev. 184, 1375 (1969). [D1, 375 (1970) (E)].
32. "Application of the Veneziano Model in the Reaction $\pi^+ d \rightarrow \pi^+\pi^-\pi^+ d$ at 5.4 GeV/c," B.J. Deery, J.E. Mansfield, N.N. Biswas, N.M. Cason, V.P. Kenney, J.A. Poirier, and W.D. Shephard, Phys. Letters 31B, 82 (1970).
33. "Study of the Reaction $\pi^-p \rightarrow p\pi^+\pi^-\pi^-\pi^0$ and $\pi^-p \rightarrow n\pi^+\pi^+\pi^-\pi^-$ at 8 GeV/c," N.M. Cason, J.W. Andrews, N.N. Biswas, T.H. Groves, E.A. Harrington, P.B. Johnson, V.P. Kenney, J.A. Poirier, and W.D. Shephard, Phys. Rev. D1, 851 (1970).
34. "Production and Neutral Decay of the η Meson in π^-p Collisions," W.B. Richards, C.B. Chiu, R.D. Eandi, A.C. Helmholtz, R.W. Kenney, B.J. Moyer, J.A. Poirier, R.J. Cence, V.Z. Peterson, N.K. Sehgal, and V.J. Stenger, Phys. Rev. D1, 10 (1970).
35. "Reaction $\pi^+p \rightarrow \pi^+\pi^+\pi^-\pi^0$ at 18.5 GeV/c," M.J. Hones, N.M. Cason, N. Biswas, J.A. Helland, V.P. Kenney, J.T. McGahan, J.A. Poirier, O.R. Sander, and W.D. Shephard, Phys. Rev. D2, 827 (1970).
36. "Examination of ρ^0 Density Matrix Elements Used for Vector-Dominance-Model Tests," N.N. Biswas, N.M. Cason, P.B. Johnson, V.P. Kenney, J.A. Poirier, and W.D. Shephard, Phys. Rev. D1, 2705 (1970).

37. "Evidence for Structure in the f^0 and g^0 Dipion Mass Regions," P.H. Stuntebeck, V.P. Kenney, B.J. Deery, N.N. Biswas, N.M. Cason, A.R. Dzierba, M.S. Farber, J.A. Poirier, and W.D. Shephard, Phys. Letters 32B, 391 (1970).
38. "Study of Δ^{++} (1236) + Boson Production in π^+p Interactions at 18.5 GeV/c," N.N. Biswas, N.M. Cason, M.S. Farber, J.A. Hellend, M.J. Hones, V.P. Kenney, J.T. McGahan, J.A. Poirier, J.T. Powers, O.R. Sander, and W.D. Shephard, Phys. Rev. D2, 2529 (1970).
39. "Study of the Reactions $\pi^-p \rightarrow p\pi^- MM^0$ and $\pi^-p \rightarrow p\pi^+\pi^-\pi^- MM^0$ at 8 GeV/c," A.R. Dzierba, W.D. Shephard, N.N. Biswas, N.M. Cason, P.B. Johnson, V.P. Kenney, and J.A. Poirier, Phys. Rev. D2, 2544 (1970).
40. "Double-Regge Analysis of Single-Pion Production in π^-p Interactions at 8 GeV/c," W.D. Shephard, A.R. Dzierba, N.N. Biswas, N.M. Cason, V.P. Kenney, and J.A. Poirier, Phys. Rev. D3, 113 (1971).
41. "Coherent Production of Pions in Deuterium at 5.4 GeV/c," B.J. Deery, N.N. Biswas, N.M. Cason, T.H. Groves, P.B. Johnson, V.P. Kenney, J.A. Poirier, O.R. Sander, P.H. Smith, and W.D. Shephard, Phys. Rev. D3, 635 (1971).
42. "Resonance Production in π^+d Reactions at 5.4 GeV/c," M.S. Farber, J.V. DePinto, N.N. Biswas, N.M. Cason, B.J. Deery, V.P. Kenney, J.A. Poirier, O.R. Sander, and W.D. Shephard, Nucl. Phys. B29, 237 (1971).
43. "Further Aspects of the Reaction $\pi^-p \rightarrow \pi^-\pi^+$ at 8 GeV/c," K. Takahashi, T. Sato, T. Kitagaki, S. Tanaka, K. Abe, K. Hasegawa, M. Kondo, R. Sugahara, K. Tamai, H. Kichimi, T. Okusawa, S. Nugochi, S.J. Barish, W. Selove, J.A. Poirier, N.N. Biswas, and H. Yuta, Phys. Rev. D6, 1266 (1972).
44. "I=2 S- and D-wave $\pi\pi$ Phase Shifts in the Low Energy Region," J.A. Poirier, XVI International Conference on High Energy Physics (Chicago-Batavia 1972).
45. "Energy Dependence of Backward π^+p Elastic Scattering from 2 to 6 GeV/c," W.F. Baker, D.P. Eartly, K.P. Pretzl, S.M. Pruss, A.A. Wehmann, P. Koehler, A.J. Lennox, J.A. Poirier, C.A. Rey, and O.R. Sander, Phys. Rev. Letters 32, 241 (1974).
46. "New Parameters for Δ^{++} Resonances from 2170 to 3490 MeV in π^+p Backward Elastic Scattering," C.A. Rey, A.J. Lennox, J.A. Poirier, and K.P. Pretzl, Phys. Rev. Letters 32, 908 (1974), [33, 250 (1974) (E)].
47. " $\pi^+\pi^+ \rightarrow \pi^+\pi^+$ Scattering Below 0.7 GeV from $\pi^+p \rightarrow \pi^+\pi^+n$ at 5 GeV/c," J.P. Prukop, O.R. Sander, J.A. Poirier, C.A. Rey, A.J. Lennox, B.C.-j. Chen, N.N. Biswas, N.M. Cason, V.P. Kenney, W.D. Shephard, R.D. Klem, and I. Spirn, Phys. Rev. D10, 2055 (1974).

48. "The Pion Radius," G.T. Adylov, F.K. Aliev, D. Yu. Bardin., W. Gajewski, I. Ion, B.A. Kulakov, G.V. Micelmacher, B. Niczyporuk, T.S. Nigmanov, E.N. Tsyganov, M. Turala, A.S. Vodopianov, K. Wala, E. Dally, D. Drickey, A. Liberman, P. Shepard, J. Tompkins, C. Buchanan, J. Poirier, Phys. Letters 51B, 402 (1974).
49. " π^+p Backward Elastic Scattering from 2 to 6 GeV/c," A.J. Lennox, J.A. Poirier, C.A. Rey, O.R. Sander, W.F. Baker, D.P. Eartly, K.P. Pretzl, S.M. Pruss, A.A. Wehmann and P. Koehler, Phys. Rev. D11, 1777 (1975).
50. " $\pi^-\pi^+ \rightarrow \pi^-\pi^+$ Interactions Below 0.7 GeV from $\pi^-p \rightarrow \pi^-\pi^+n$ Data at 5 GeV/c," V. Srinivasan, J.A. Helland, A.J. Lennox, J.A. Poirier, J.P. Prukop, C.A. Rey, O.R. Sander, N.N. Biswas, N.M. Cason, V.P. Kenney and W.D. Shephard, University of Notre Dame; R.D. Klem and I. Spirn (Argonne National Laboratory), Phys. Rev. D12, 681 (1975).
51. "Some Features of the Reaction $pp \rightarrow \Delta^{++}(1236)n$ at 6 GeV/c," J.D. Mountz and G.A. Smith (Michigan State University ; A.J. Lennox, J.A. Poirier, J.P. Prukop, C.A. Rey and O.R. Sander (University of Notre Dame); P. Kirk, R.D. Klem and I. Spirn (Argonne National Laboratory), Phys. Rev. D12, 1211 (1975).
52. "The Slope of Forward Elastic π^+p Elastic Scattering from 4.4 to 6.0 GeV/c," C.A. Rey, J.A. Poirier, A.J. Lennox and V. Srinivasan (University of Notre Dame), and W.F. Baker, D.P. Eartly, S.M. Pruss and A.A. Wehmann (Fermi National Accelerator Laboratory), Phys. Rev. D15, 59 (1977).
53. "A Direct Measurement of the π^- Form Factor," E.B. Dally, D.J. Drickey, J.M. Hauptman, C.F. May, D.H. Stork, University of California at Los Angeles; J.A. Poirier, C.A. Rey and R.J. Wojslaw, University of Notre Dame, Notre Dame, Indiana; P.F. Shepard, University of Pittsburgh; A.J. Lennox, J.C. Tompkins, T.E. Toohig and A.A. Wehmann, Fermi National Accelerator Laboratory; and I.S. Ioan, T.S. Nigmanov, E.N. Tsyganov and A.S. Vodopianov, Joint Institute for Nuclear Research, Dubna, USSR., Phys. Rev. Letters 39, 1176 (1977).
54. "A Measurement of the Electromagnetic Size of the Pion from Direct Elastic Pion Scattering Data at 50 GeV/c," G.T. Adylov, F.K. Aliev, D. Yu Bardin, W. Gajewski, I. Ioan, B.A. Kulakov, G.V. Micelmacher, B. Niczyporuk, A.S. Vodopianov and K. Wala, E. Dally, D.J. Drickey, A.D. Liberman, P.F. Shepard, J.C. Tompkins, and C.D. Buchanan, J.A. Poirier, Nuclear Physics B128, 461 (1977).
55. "Experiences with Proportional Wire Chambers," John A. Poirier, Charles A. Rey, James T. Volk, and Richard Wojslaw, Nucl. Inst. & Meths. 153, 105 (1978).
56. "Fast Analog Logic for Multiwire Proportional Chambers," Charles A. Rey, Richard J. Wojslaw, John A. Poirier and James T. Volk, Nucl. Instr. & Methods 157, 401 (1978).

57. "Direct Measurement of the Negative-Kaon Form Factor," E.B. Dally, J.M. Hauptman, J. Kubicek, D.H. Stork, and Watson (UCLA); Z. Guzik, T.S. Nigmatov, V.D. Riabtsov, E.N. Tsyganov, and A.S. Vodopianov (Dubna); A. Beretvas, A. Grigorian, J.C. Tompkins, T.E. Toohig, and A.A. Wehmann (Fermilab); J.A. Poirier, C.A. Rey, and J.T. Volk (Notre Dame); and P. Rapp and P.F. Shepard (Pittsburgh), *Phys. Rev. Letter* 45, 232 (1980).
58. "Wavelength Measurements of $1s2s^3S-1s2p^3P$ Transitions in Helium-Like $^{28}\text{Si}^{12+}$, $^{32}\text{Si}^{14+}$ and $^{35}\text{Cl}^{15+}$," A.E. Livingston, S.J. Hinterlong, J.A. Poirier, R. DeSerio, and H.G. Berry, *J. Phys. B: Atom. Molec. Phys.* 13, L139 (1980).
59. "Measurement of the π^- Form Factor," E.B. Dally, D.J. Drickey, J.M. Hauptman, C.F. May, D.H. Stork, J.A. Poirier, C.A. Rey, R.J. Wojslaw, P.F. Shepard, A.J. Lennox, J.C. Tompkins, T.E. Toohig, A.A. Wehmann, I.X. Ioan, T.S. Nigmatov, E.N. Tsyganov, and A.S. Vodopianov, *Phys. Rev.* D24, 1718 (1981).
60. "Elastic-Scattering Measurement of the Negative-Pion Radius," E.B. Dally, J.M. Hauptman, J. Kubicek, D.H. Stork, and A.B. Watson, University of California, and Z. Guzik, T.S. Nigmatov, V.D. Riabtsov, E.N. Tsyganov, and A.S. Vodopianov, Joint Institute for Nuclear Research, Dubna, U.S.S.R., and A. Beretvas, A. Grigorian, J.C. Tompkins, T.E. Toohig, and A.A. Wehmann, Fermi National Accelerator Laboratory, and J.A. Poirier, C.A. Rey, and J.T. Volk, University of Notre Dame, and R.D. Rapp and P.F. Shepard, University of Pittsburgh, *Phys. Rev. Letter* 48, 375 (1982).
61. "Search for resonant states from 1 to 5 GeV," J.A. Poirier in *Multiparticle Dynamics 1981: Proceedings of the XII International Symposium on Multiparticle Dynamics*, W.D. Shephard and V.P. Kenney, eds., Notre Dame, World Scientific Publishing, Singapore, 153 (1982).
62. "Diffractive Production of $K_S^0 K_S^0 \pi^- n \pi^- N$ Interactions at 200 GeV/c," T.Y. Chen, E.W. Jenkins, K.J. Johnson, K.W. Lai, J. LeBritton, Y.C. Lin, A.E. Pifer (Univ. Arizona); H.C. Fenker, D.R. Green (Fermi National. Accelerator Lab.); J.R. Albright, R.N. Diamond, J.H. Goldman, S.L. Hagopian, J.E. Lannutti, J.E. Piper (Florida State Univ.); C.C. Chang, T.C. Davis, J.A. Poirier (Univ. of Notre Dame); A. Napier (Tufts Univ.); J.M. Marraffino, C.E. Roos, J.W. Waters, M.S. Webster, E.G.H. Williams (Vanderbilt Univ.); G.B. Collins, J.R. Ficenece, W.P. Trower (Virginia Polytechnic Inst.); *Phys. Rev.* D28, 2304 (1983).
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