

## PUBLICATIONS IN REFEREED JOURNALS

1. Isobar Model Analysis of Single Pion Production in Pion-Nucleon Collisions Below 1 GeV (with G. B. Yodh), *Phys. Rev. Lett.* **10**, 353 (1963).
2. Determination of the  $\Delta_\delta^{++} - \Delta_\delta^0$  Mass Difference, *Phys. Rev. Lett.* **14**, 118 (1965).
3. Experimental Check of Some SU(6) Cross Section Equalities (with D. Cline and T. Binford), *Phys. Rev. Lett.* **14**, 715 (1965).
4. Baryon-Baryon Scattering and SU(6) (with D. Cline), *Phys. Lett.* **17**, 340 (1965).
5. Confirmation of an SU(6)<sub>W</sub> Scattering Relation, *Phys. Rev. Lett.* **15**, 710 (1965).
6. Analysis of Total Cross Section Differences at High Energy (with V. Barger), *Phys. Rev. Lett.* **15**, 930 (1965).
7. Real Part of the Proton-Neutron Scattering Amplitude (with V. Barger), *Phys. Rev. Lett.* **16**, 545 (1966).
8. An Analysis of Single Pion Production Reactions  $\pi + N \rightarrow \pi_1 + \pi_2 + N'$  Below 1 GeV (with G. B. Yodh), *Phys. Rev.* **145**, 1309 (1966).
9. Partial Wave Analysis of the Reactions  $\pi^+p \rightarrow \pi^0 + p + \pi^+$  and  $\pi^{++}\pi^+n$  Below 1 GeV (with G. B. Yodh), *Phys. Rev.* **145**, 1327 (1966).
10. Elastic Scattering at High Energy in an SU(3) Regge Pole Model (with V. Barger), *Phys. Rev.* **146**, 1080 (1966).
11. Nonet Coupling to Baryons (with V. Barger and K. Sarma), *Phys. Rev.* **147**, 1115 (1966).
12. Interference of Regge Rho Exchange with Direct Channel Fermion Resonances (with V. Barger), *Phys. Rev.* **151**, 1123 (1966).
13. Evidence for a  $\Sigma^-\eta$  Threshold Enhancement Near Threshold (with D. Cline), *Phys. Lett.* **25B**, 41 (1967).
14. SU(3) Symmetry Tests for Regge Residues (with V. Barger), *Phys. Rev. Lett.* **18**, 294 (1967).
15. Regge Parameters from Low-Energy Scattering, *Phys. Rev. Lett.* **19**, 550 (1967).
16. Low-Energy  $\pi\pi$  Interaction, *Phys. Rev.* **162**, 1338 (1967).
17. On the Decoupling of a Second Rho in Forward  $\pi N$  Scattering, *Phys. Lett.* **26B**, 310 (1968).
18. Use of Single Pion Production to Remove Ambiguities in PCAC and Algebra Predictions of  $\pi\pi$  Scattering (with L. Turner), *Phys. Rev. Lett.* **20**, 1127 (1968).
19. Superconvergence and Regge Poles I; Odd Signature Exchanges, *Phys. Rev.* **171**, 1681 (1968).
20. Asymptotic Projections of Scattering Models (with V. Barger and D. Reeder), *Nucl. Phys. B* **5**, 411 (1968).

21. Vacuum Exchanges, *Nuovo Cim. Lett.* **57**, 420 (1968).
22. Constraints on Asymptotic Behavior of Meson Baryon Scattering Amplitude (with G. B. Yodh), *Phys. Rev. Lett.* **21**, 1022 (1968).
23. Consistency of Low-Energy Parameters and Soft-Pion Scattering Theory (with L. Turner), *Phys. Rev.* **181**, 2141 (1969).
24. On a Universal Curve for  $\pi\pi$  Scattering Lengths, 1970 (unpublished).
25. A Theory of Low Energy  $\pi\pi$  Scattering, 1970 (unpublished).
26. Separation of  $N$  and  $\Delta$  Exchanges in  $\pi N$  Scattering and Deduction of Amplitude Zeros (with V. Barger), *Phys. Rev. D* **5**, 2736 (1972).
27. Coin Spinning on a Table, *Am. J. Phys.* **40**, 1543 (1972).
28. Exchange Structure of  $N, \Delta$  Backward Peaks (with V. Barger and F. Halzen), *Nucl. Phys. B* **49**, 206 (1972).
29. General Chiral Symmetry-Breaking and  $\sigma$ -Terms (with L. Turner), *Phys. Rev. D* **6**, 3522 (1972).
30. Implications for the  $\Delta N\pi$  Interaction and  $\sigma$ -Term from Low Energy  $\pi N$  Scattering (with L. Turner and E. Osypowski), *Phys. Rev. D* **7**, 3444 (1973).
31. Resonance and Background Addition with Application to a Pole Model of the  $\Delta(1220)$  Resonance, *Lett. Nuovo Cim.* **10**, 333 (1974).
32. Solutions of the Multichannel Unitarity Equations Describing the Addition of a Resonance and Background: Application to a Pole Model of Photoproduction, *Nucl. Phys. B* **78**, 55 (1974).
33. A Pole Model Calculation of the Photoproduction Multipoles in the  $\Delta(1220)$  Region (with E. T. Osypowski), *Nucl. Phys. B* **87**, 399 (1975).
34.  $e^+e^-$  Annihilation Scaling Plateaus from Finite Energy Sum Rules (with V. Barger and W. F. Long), *Phys. Lett.* **57B**, 452 (1975).
35. New Evaluation of Muon ( $g - 2$ ) Hadronic Part (with V. Barger and W. F. Long), *Phys. Lett.* **60B**, 89 (1975).
36. Systematics of Low Energy  $\pi N$  Scattering (with E. Osypowski), *Nucl. Phys. B* **101**, 136 (1975).
37. Does the  $\Delta(3, 3)$  Resonance Factorize? *Phys. Rev. D* **13**, 2502 (1976).
38. Backward Polarization as a Direct Experimental Measure of Peripherality (with F. Halzen and A. Yokosawa), *Nucl. Phys. B* **113**, 269 (1976).
39. Why Does a Mass on a Spring Sometimes Misbehave? *Am. J. Phys.* **44**, 1211 (1976).
40. Resolution of an Ambiguity in Alternative Soft-Pion Approaches to  $\pi N \rightarrow \pi\pi N$  Near Threshold (with E. Osypowski and L. Turner), *Phys. Rev. Lett.* **38**, 296 (1977).
41. The  $\Delta(3, 3)$  Phase Shift, *Nuovo Cim.* **40A**, 284 (1977).

42. Comment on the Effect of the Mass of the Cord on the Period of a Simple Pendulum (with S. T. Epstein), *Am. J. Phys.* **45**, 671 (1977).
43. Vector Mesonic and Unitarity Effects in Low Energy Photoproduction (with E. Osypowski), *Phys. Rev. D* **17**, 174 (1978).
44. Electroproduction of Low Hadronic Masses (with E. Monsay and E. Osypowski), *Phys. Rev. D* **17**, 2938 (1978).
45. The Precessing Spherical Pendulum, *Am. J. Phys.* **46**, 1118 (1978).
46. A Rigorous Derivation of the Alterelli-Cabibbo-Maiani Relation (with E. Osypowski), *J. Phys. G: Nucl. Phys.* **6**, 423 (1980).
47.  $\pi N$   $\sigma$ -Term from Threshold Data, *J. Phys. G: Nucl. Phys.* **6**, 431 (1980).
48. Global and Pole Duality Applied to  $c$  and  $b$  Quarks (with K. J. Miller), *Phys. Rev. D* **22**, 2137 (1980).
49. Heavy Quark Masses and Duality (with K. J. Miller), *Z. Phys. C* **8**, 21 (1981).
50. Spherical Pendulum Revisited, *Am. J. Phys.* **49**, 531 (1981).
51. Testing QCD with Moment Sum Rules (with K. J. Miller), *Phys. Rev. D* **25**, 1247 (1982).
52. Local QCD Sum Rules and Quarkonia (with K. J. Miller), *Phys. Rev. D* **25**, 1253 (1982).
53. Quarkonia Potential by a Numerical Inversion Method with Given Endpoint Behavior (with K. J. Miller), *Phys. Rev. D* **25**, 2383 (1982).
54. On the Martin Potential (with K. J. Miller), *Phys. Lett.* **109B**, 314 (1982).
55. On the Nature of the Short-Distance  $\bar{Q}Q$  Interaction with Implications Concerning Confinement (with K. J. Miller), *Phys. Lett.* **116B**, 450 (1982).
56. Relativistic Corrections in Potential Models (with K. J. Miller), *Phys. Rev. D* **28**, 674 (1983).
57. Quarkonium Bound States and Coupling to Hadrons (with S. Jacobs and K. J. Miller), *Phys. Rev. Lett.* **50**, 1181 (1983).
58. Comment on Quark Confinement and the Dirac Equation, *Am. J. Phys.* **51**, 1042 (1983).
59. A  $P$ -wave Sum Rule and Quark Confinement, *Phys. Rev. D* **28**, 1223 (1983).
60. Probing QCD with Heavy Quark Bound States (with K. Hagiwara, S. Jacobs and K. J. Miller), *Phys. Lett.* **131B**, 455 (1983).
61. On the Validity of SVZ-Motivated Heavy Quark Potentials (with S. Jacobs), *Phys. Lett.* **133B**, 111 (1983).
62. A Potential Problem for the Potential Model, *Phys. Lett.* **139B**, 417 (1984).
63. Production and Decay of  $P$ -wave Charmonium States in  $\bar{p}p$  Collisions (with A. D. Martin and W. J. Stirling), *Phys. Lett.* **147B**, 203 (1984).

64. The Hadronic Width of the  $\chi_2$  (with A. D. Martin and A. Peacock), *Phys. Rev. D* **31**, 81 (1985).
65. A Unified Treatment of the  $\rho$  and  $\rho'$  (with C. Erkal), *Z. Phys. C* **29**, 485 (1985).
66. Book Review on *Dynamics*, by S. Neil Rasband, *Am. J. Phys.* **53**, 701 (1985).
67. Testing the Single Quark Radiation Hypothesis (with C. J. Suchyta III, A. D. Martin and W. J. Stirling), *Phys. Rev. D* **31**, 1759 (1985).
68. The Pendulum-Rich Physics from a Simple System (with W. Nelson), *Am. J. Phys.* **54**, 112 (1986).
69. Comment on the Slipping of a Rolling Sphere, *Am. J. Phys.* **54**, 667 (1986).
70. Comparing the Schrödinger and Spinless Salpeter Equations for Heavy Quark Bound States (with S. Jacobs and C. J. Suchyta III), *Phys. Rev. D* **33**, 3338 (1986).
71. On the Consistency of Electromagnetic Form Factors and  $\pi\pi$  Scattering in the  $\rho(1600)$  Region (with C. Erkal), *Z. Phys. C* **31**, 615 (1986).
72. Quark Vacuum Polarization and the Lüscher Term (with C. J. Suchyta III), *Phys. Rev. Lett.* **57**, 37 (1986).
73. Radiative Angular Distributions from  $c\bar{c}$  States Directly Produced by  $p\bar{p}$  Annihilation (with C. J. Suchyta III), *Phys. Rev. D* **34**, 2043 (1986).
74. Mechanical Isynchronous Potentials (with E. T. Osypowski), *Am. J. Phys.* **55**, 720 (1987).
75. A Three Channel Model of  $\pi\pi$  Scattering and the Elastic and Inelastic Electromagnetic Form Factors (with C. Erkal), *Z. Phys. C* **33**, 445 (1987).
76. Higgs Boson- $Z^0$  Production from Fourth-Generation Quarks at Supercollider Energies (with V. Barger, E.W.N. Glover, K. Hikasa, W.-Y. Keung, C. J. Suchyta III and X. R. Tata), *Phys. Rev. Lett.* **57**, 1672 (1986).
77. The Lorentz Nature of Confinement (with C. J. Suchyta III), *Phys. Rev. D* **35**, 1738 (1987).
78. Superheavy Quarkonium Production and Decays: A New Higgs-Boson Signal (with V. Barger, E.W.N. Glover, K. Hikasa, W.-Y. Keung, C. J. Suchyta III and X. R. Tata), *Phys. Rev. D* **35**, 3366 (1987).
79. Relativistic Reduction in Momentum Space (with Steve Jacobs and C. J. Suchyta III), *Phys. Rev. D* **35**, 2448 (1987).
80. Meson Electromagnetic Radii – A Model Independent Analysis (with C. Erkal), *J. Phys. G: Nucl. Phys.* **13**, 1355 (1987).
81. A Systematic Examination of Spin-Independent and Spin-Dependent Interactions of Heavy Quarks (with C. J. Suchyta III), *Phys. Rev. D* **36**, 1459 (1987).
82. A Phenomenological Picture of  $P$ -wave Meson Multiplet Inversion (with C. J. Suchyta III), *Phys. Lett. B* **199**, 271 (1987).

83. General Relativistic Perihelia Precession and the Anharmonic Oscillator *Am. J. Phys.* **56**, 89 (1988).
84. String Potential Model: Spinless Quarks (with D. LaCourse), *Phys. Rev. D* **39**, 2751 (1989).
85. Systematics of Some Ultrarelativistic Potential Models (with C. Goebel and D. LaCourse), *Phys. Rev. D* **41**, 2917 (1990).
86. Dynamical Symmetry Breaking and Chaos in Duffing's Equation (with C. Olson), *Am. J. Phys.* **59**, 907 (1991).
87. QCD, Relativistic Flux Tubes and Potential Models (with C. Olson and Ken Williams), *Phys. Rev. D* **45**, 4307 (1992).
88. Mass of the Singlet  $P$  State (with F. Halzen, C. Olson and M. L. Stong), *Phys. Lett. B* **282**, 379 (1992).
89. Book review on *Selected Popular Writings of E. U. Condon*, ed. by A. O. Baur, H. Odabassi and A. van der Merwe, *Am. J. Phys.* **60**, 477 (1992).
90. QCD Structure of Quarkonium Spin Spectra (with F. Halzen, C. Olson and M. L. Stong), *Phys. Rev. D* **47**, 1013 (1993).
91. Phase of Direct CP Violation from Threshold Pion Production (with Erik Chell), *Phys. Rev. D* **48**, 4076 (1993).
92. QCD and the Relativistic Flux Tube with Fermionic Ends (with Ken Williams), *Phys. Rev. D* **48**, 417 (1993).
93. Does  $J/\psi \rightarrow \pi^+\pi^-$  Fix the Electromagnetic Form Factor  $F_\pi(t)$  at  $t = M_{J/\psi}^2$ ? (with J. Milana and S. Nussinov), *Phys. Rev. Lett.* **71**, 2533 (1993).
94. The Quantized Relativistic Flux Tube (with C. Olson), *Phys. Rev. D* **49**, 4675 (1994).
95. A Stringent Test of Chiral Perturbation Theory (with Erik Chell), UW-Madison preprint MAD/PH/756 (1993), submitted to *Phys. Rev. D*.
96. Asymmetric Flux Tube (with S. Veseli), *Phys. Rev. D* **51**, 3578 (1995).
97. Relativistic Flux Tube Model Calculation of the Isgur–Wise Function (with S. Veseli), *Phys. Rev. D* **51**, 2224 (1995).
98. Observations on the Potential Confinement of a Light Fermion (with Sinisa Veseli and Ken Williams), *Phys. Rev. D* **51**, 5079 (1995).
99. Fermion Confinement by a Relativistic Flux Tube (with S. Veseli and Ken Williams), *Phys. Rev. D* **53**, 4006 (1996).
100. A One Parameter Representation for the Isgur–Wise Function (with S. Veseli), *Phys. Lett. B* **353**, 96 (1995).
101. On the Interpretation of  $\pi N \rightarrow \pi\pi N$  Data Near Threshold (with U. Meißner, N. Kaiser and V. Bernard),  $\pi N$  Newsletter **10**, 201 (1995).
102. Instantaneous Bethe–Salpeter Equation (with S. Veseli and K. Williams), *Phys. Rev. D* **52**, 5141 (1995).

103. On the Validity of the Reduced Salpeter Equation (with S. Veseli and K. Williams), Phys. Rev. D **53**, 504 (1996).
104. Modelling Form Factors in HQET (with S. Veseli), Phys. Lett. B **367**, 302 (1996).
105. Radiative Rare  $B$  Decays Revisited (with S. Veseli), Phys. Lett. B **367**, 309 (1996).
106.  $S$  to  $P$  Wave Form Factors in Semileptonic  $B$  Decays (with S. Veseli), Z. Phys. C **71**, 287 (1996).
107. Semileptonic  $B$  Decays into Higher Charmed Resonances (with S. Veseli), Phys. Rev. D **54**, 886 (1996).
108. Sum Rules, Regge Trajectories and Relativistic Quark Models (with S. Veseli), Phys. Lett. B **383**, 109 (1996).
109. On Quark Confinement Dynamics (with T. J. Allen, S. Veseli and K. Williams), Phys. Rev. D **55**, 5408 (1997).
110. On the Bounds for the Curvature and Higher Derivatives of the Isgur-Wise Function (with S. Veseli), Phys. Lett. B **397**, 263 (1997).
111. Universal Behavior in Excited Heavy-Light and Light-Light Mesons, Phys. Rev. D **55**, 5479 (1997).
112. Anomalous Threshold, Confinement, and an Essential Singularity in the Heavy-Light Form Factor, Phys. Rev. D **56**, 238 (1997).
113. Rigorous Pion-Pion Scattering Lengths from Threshold  $\pi N \rightarrow \pi\pi N$ , Phys. Lett. B **410**, 311 (1997).
114. Flux Tubes in Effective Field Theory (with S. Veseli and Ken Williams), J. Phys. **G24**, 545 (1998).
115. Excited Glue and the Vibrating Flux Tube (with T. J. Allen and S. Veseli), Phys. Lett. B **434**, 110 (1998).
116. Flux Tube Vibrations and the Excited Glue Spectroscopy (with T. J. Allen and S. Veseli), Nucl. Phys. (Proc. Suppl) **75B**, 299 (1999).
117. Adiabatic String Shape for Non-uniform Rotation (with T. Allen and S. Veseli), Phys. Rev. **D59**, 094011 (1999).
118. Curved QCD String Dynamics (with T. J. Allen and S. Veseli), Phys. Rev. **D60**, 074026 (1999).
119. A Note on the Computation of Mode Sums (with Theodore J. Allen and Jeffrey R. Schmidt), Phys. Rev. D **62**, 066006 (2000).
120. The Nucleon Sigma Term from Threshold Parameters, hep-ph/0001203 (Jan. 2000), Phys. Lett. **B482**, 50 (2000).
121. From Scalar to String Confinement (with Theodore J. Allen and Sinisa Veseli), Phys. Rev. D **62**, 094021 (2000).
122. Semileptonic Form Factors—A Model-independent Approach (with Todd Coleman and Sinisa Veseli), Phys. Rev. D **63**, 032006 (2001).

M. G. Olsson (Publications in Refereed Journals, continued)

123. Analytic Quantization of the QCD String (with T. J. Allen, C. Goebel and Sinisa Sinisa), Phys. Rev. D **64**, 094011 (2001).
124. Consistency of a Large Sigma Term and the Influence of Higher Waves (with W. Kaufmann), U.W. Madison report MADPH-02-1258.
125. QCD String Structure in Vector Confinement (with T.J. Allen, T. Coleman, and S. Veseli), Phys. Rev. D (in press).
126. Roadmap to Meson Spectroscopy, J. Phys. G (submitted).
127. Reduction of the QCD String to a Time Component using Vector Potential (with T.J. Allen), Phys. Rev. D (submitted).

## PUBLICATIONS – BOOKS

*Classical Mechanics: A Modern Perspective* (with V. Barger), McGraw-Hill, New York (January 1973); second edition (January 1995).

*Classical Electricity and Magnetism: A Contemporary Perspective* (with V. Barger), Allyn and Bacon, Boston (January 1987); second edition, McGraw-Hill, New York (1994).

## PUBLICATIONS IN CONFERENCE PROCEEDINGS (INVITED TALKS)

*Comment on the Isospin Two  $\pi\pi$  Amplitude*, Conference on  $\pi\pi$  and  $k\pi$  Interactions, Argonne Laboratory, p. 759 (May 1969).

*The Role of the  $\Delta(3,3)$  in Low Energy  $\pi N$  Elastic and Photoproduction Models*, International Topical Conference on Meson-Nuclear Physics, May 24–28, 1976, Carnegie-Mellon University, AIP Conference Proceedings, **33**, 21 (1976).

*Bottomonia, B-Meson Workshop*, Vanderbilt University (December 1984).

*Charmonium Multipoles from  $\bar{p}p$  Annihilation*, Physics with Antiprotons at LEAR in the ACOL Era, Tignes, Savoie, France (January 1985).

*$c\bar{c}$  from  $p\bar{p}$* , International Conference on Hadron Spectroscopy, College Park, Maryland (April 1985).

*A Comparison of the Schrödinger and Spinless Salpeter Equations*, International Conference on Hadron Spectroscopy, College Park, Maryland (April 1985).

*Heavy Quark Spectroscopy and Anti-Proton Collisions*, Antimatter Facility Workshop, University of Wisconsin (October 1985).

*Onia Spectroscopy by Direct Channel Production*, Antimatter Physics at Low Energy, Fermilab Low Energy Antiproton Facility Workshop (April 1986).

*Superheavy Quarkonium and the Intermediate Mass Higgs*, Snowmass SPS Workshop (July 1986).

*Ultra-Relativistic Quark Dynamics*, HADRON 89: International Conference on Hadron Spectroscopy, Ajaccio, Corsica (September 1989) (Editions Frontières, 1989), p. 417.

*Heavy Quark Masses*, HADRON 91: International Conference on Hadron Spectroscopy, College Park, MD (August 1991).

*QCD Structure of Quarkonium Spin Spectra*, DPF92: 7th Meeting of the American Physical Society Division of Particles and Fields, Fermilab (November 1992).

*The Duffing Equation and the Transition to Chaos*, Symposium on Non-Linear Dynamics and Chaos, Madison, WI (April 1993).

*The Relativistic Flux Tube Model*, HADRON 93, Como, Italy (June 1993).

*Flux Tubes and Heavy Quark Symmetry, Quark Confinement and the Hadron Spectrum*, Como, Italy (June 1994).

*Testing Chiral Perturbation Theories of  $\pi$ - $\pi$  Scattering*, Workshop on Chiral Dynamics 94: Theory and Experiment, MIT, Cambridge, MA (July 1994).

*Dynamical Confinement and Meson Spectroscopy*, Seventh Adriatic Meeting on Particle Physics: Perspectives in Particle Physics '94, Brijuni, Croatia (September 1994).

*Flux Tube Model of Hadrons*, Spring Meeting of the American Physical Society, Washington, D.C. (April 1995).

*B Decay into Higher Charmed States*, Conference on Topics in the Weak Interactions, Vanderbilt University, Nashville (April 1996).

*Confinement and Spin*, Quarkonium Physics Workshop, University of Illinois at Chicago (June 1996).

*Flux Tubes, Spin and QCD*, Quark Confinement and the Hadron Spectrum II, Como, Italy (June 1996).

*Semi-leptonic B Decay*, 2nd International Conference on B Physics and CP Violation, Honolulu, Hawaii (March 1997).

*Testing ChPT in  $\pi\pi$  Scattering Using the Universal Curve*, Workshop on Chiral Dynamics 1997: Theory and Experiment, Mainz, Germany (September 1997).

*Relativistic Strings and Hybrid Mesons* (with T. J. Allen and S. Veseli), The Third International Conference on Quark Confinement and the Hadron Spectrum, Jefferson Lab (June 1998).

*Flux Tube Vibration and the Excited Glue Spectroscopy* (with T. J. Allen and S. Veseli), Third International Conference on Charmed and Beauty Hadrons, Genoa, Italy (June 1998).

*Scalar Confinement and QCD* (with T. J. Allen and S. Veseli), CIPANP 2000: 7<sup>th</sup> Conference on the Intersections of Particle and Nuclear Physics, Quebec City, Canada (May 2000).

*The Sigma Term*, Chiral Dynamics 2000: Theory and Experiment, Jefferson Lab, Newport News, VA (July 2000).

*Analytic Semi-classical Quantization of a QCD String with Light Quarks*, MRST 2001, Montreal, Canada (May 2001).

*Consistency of a Large  $\pi N$  Sigma Term* (with W.B. Kaufmann), Meson-Nucleon (MENU) 2001, George Washington University, Washington, D.C. (July 2001).

*Spectroscopy and Confinement*, Partial Wave Analysis Workshop, Carnegie Mellon University, Pittsburgh, PA (June 2002).