CURRICULUM VITAE

CARL ROSENZWEIG

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Education

B.S. Polytechnic Institute of New York, Brooklyn - 1967 M.S.
Polytechnic Institute of New York, Brooklyn - 1967 Ph.D.
Harvard University - 1972

Academic Specialization

Theoretical Particle Physics, Cosmology

Professional Employment

1972 - 1973	Research Physicist, University of California, Berkeley
1973 - 1974	Research Associate, Weizmann Institute of Science
1974 - 1975	Research Physicist, University of California, Berkeley
1975 - 1976	Research Assistant Professor of Physics, University of Pittsburgh
1976 - 1980	Assistant Professor of Physics, Syracuse University
1980 - 1986	Associate Professor of Physics, Syracuse University
1986 to Present	Professor of Physics, Syracuse University

Membership in Professional and Learned Societies

American Physical Society
American Association for the Advancement of Science
Executive Committee New York State Section of American Physical Society
Executive Committee New York State Section APS - 1988-1991

Director SUPA Physics 2010-

EXTERNALLY FUNDED EDUCATIONAL ACTIVITIES

1. Co PI *Integrating the Universe into K-12 Teaching.* NASA IDEAS grant, 5/02 -5/04, $50,000
2. PI *Cosmic Connections* NSF grant in Public Science Education, 10/02-12/08, $600,000
3. Co-Investigator *Coming into the Classroom from the Outside: Childhood Contexts and Dispositions to Learning.* NSF Science of Learning Center Catalyst, 9/03-9/05, $250,000
4. Co-PI *Astronomy and Computers in the classroom* NASA IDEAS grant 5/05-5/07

PUBLICATIONS OF CARL ROSENZWEIG

A. Publications in Letter Journals

1. Scattering Amplitudes for Physical States in Dual Resonance Models; with K.A. Friedman and U.P. Sukhatme, *LeU. Nuovo Cimento* **1,** 1109 (1971).
2. Excited Vertices in Model of Neveu-Schwarz, *Lt.. Nuovo Cimento* 2, 924 (1971).
3. The Adler Condition and High Energy Bounds on Massless particle Total Cross Sections; with S.P. Auerbach and M.R. Pennington, *Phys. Let..* B45, 275 (1973) .
4. Regge Couplings and Intercepts from the Planar Dual Bootstrap; with G. Veneziano, *Phys. Let..* 52B, 335 (1974).
5. A Systematic Lifting of Exchange Degeneracy that Clarifies the Relationship Between Pomeron Reggeons and SU_3 Symmetry Violation; with G.F. Chew, *Phys. Let.* 58B, 93 (1975).
6. Have Mesons Composed of Charmed Diquarks Been Discovered? *Phys. Rev. Let* 36, 697 (1976).
7. Asymptotic Planarity Prediction of Pomeron-like Unnatural Parity Trajectory; with G.F. Chew, *Phys. Let.* 63B, 429 (1976).
8. Implications of Duality, Unitarity, and SU_6 Symmetry for Baryons and Baryonium, *Phys. Let.* 71B, 203 (1977).

9. Chiral Symmetry Breaking in a Chromomagnetic Superconductor; with V.P. Nair, *Phys. Letts.* 131B, 434 (1983).

10. Electromagnetic Duality, Landau Ghosts, Superconductivity, QCD and All That; with V.P. Nair, *Phys. Letts.* 135B, 450 (1984).

11. Bulk Vibrations and Twists in Global Cosmic Strings; with A. Srivastava, *Phys. Letts.* B222, 368 (1989).

12. Glueball and Baryon Production in Parton Showers; with A.M. Srivastava, *Phys. Rev. Letts.* 67, 306 (1991).

B. Publications in Regular Refereed Journals

1. Use of WKB Method for Obtaining Energy Eigenvalues; with J.B. Kreiger, and M.L. Lewis, 1. *Chem. Phys.* 47, 2942 (1967).

2. Application of a Higher Order WKB Approximation to Radial Problems; with J.B. Kreiger, *Phys. Rev.* 164, 171 (1967).

3. Exact Quantization Conditions; with J.B. Kreiger, 1. *Math. Phys.* 9, 849 (1968).

4. Dual Resonance Amplitude for Spinning Particles; with U.P. Sukhatme, *Nuovo Cimento* 3A, 511 (1971).

5. Photon-like Particles, Compton Scattering and Sum Rules in Dual Resonance Models; with K. Friedman, *Nuovo Cimento* lOA, 53 (1972).

6. Unitarity Sum Rules and Soft Pion Amplitudes; with G. Veneziano, *Nuovo Cimento* 12A, 409 (1972).

7. The Pion-Pion Total Cross Section: Its Scale and Massless Pion Limit; with M.R. Pennington, *Nucl. Phys.* B57, 305 (1973).

8. Topics in the S-Matrix Theory of Massless Particles; with S.P. Auerbach and M.R. Pennington, *Ann. Phys.* (NY), 85, 214 (1974).

9. The Pomeron-Reggeon Relationship According to the Topological Expansion; with G.F. Chew, *Phys. Rev.* D12, 3907 (1975).

10. Asymptotic Planarity; an S-Matrix Basis for the Okubo-Zweig-Iizuka Rule; with G.F. Chew, *Nucl. Phys.* B104, 290 (1976).

11. Topological Expansions and Decays of New Particles: Phenomenology of OkuboZweig-Iizuka Rule Violation, *Phys. Rev.* D13, 3080 (1976).

12. Pomeron-f Identity and Hadronic Total Cross-Sections at Moderate Energy; with P. Stevens and G.F. Chew, *Nucl. Phys.* BllO, 355 (1976).

13. A Statistical Weight Interpretation for the $1/N^2$ Convergence Factors of the Topological Expansion; with G.F. Chew, *Annals of Physics* (NY) 105, 212 (1977).

14. G Parity and the Breaking of Exchange Degeneracy; with G.F. Chew, *Phys. Rev.* D15, 3433 (1977).

15. Dual Topological Unitarization: An Ordered Approach to Hadron Theory; with G.F.Chew, *Phys. Reports* 41, no. 5 (1978).

16. Heavy Quark Content of Light Hadrons; Implications for the T Family, *Il Nuovo Cimento* 47 A, 74, (1978).

17. Is the Effective Lagrangian for QCD a Sigma Model? with J. Schechter and G. Trahern, *Phys. Rev.* D21, 3388 (1980).

18. Can (Should) We Understand the Strong Interactions? Proc. of the MontrealRochester-Syracuse- Toronto Meeting, Syracuse University, 1980.

19. On the Appropriate Definition of the Scale Parameter Λ in QCD; with E. Monsay, *Phys. Rev.* D23, 1217 (1981).

20. A Pseudoscalar Glueball, the Axial Anomaly, and the Mixing Problem for the Pseudoscalar Mesons; with A. Salomone and J. Schechter, *Phys. Rev.* D24, 2545 (1981).

21. The Effect of Quark Masses on the Running of the QCD Coupling Constant, *Zeitschrift fur Physik,* C14, 179 (1982).

22. The H Meson and Deviations from Ideal Mixing, *Phys. Rev.* D25, 3081 (1982).

23. How Does a Pseudoscalar Glueball Come Unglued? with A. Salomone and J. Schechter, *Nucl. Phys.* B206, 12 (1982).

24. QCD Vacuum as a Chromomagnetic Superconductor: Microscopic Physics; with V.P. Nair, *Phys. Rev.* D31, 401 (1985).

25. Bags vs. Strings: Hadrons in type I and type II superconducting Vacua; with V.P. Nair, *Nucl. Phys.* B250, 729 (1985).

26. Linearly Rising Regge Trajectories and Bag Strings Models for Hadrons; with F. Lizzi, *Phys. Rev.* D31, 1685 (1985).

27. From Baglike Models to the Large N_c Limit via the Abelian Projection, *Phys. Rev.* D38, 1934 (1988).

28. Confining Phase Transition as a Monopole Condensation, *Phys. Rev.* D39, 1221 (1989).

29. String Production as a Model of Hadronization in the Quark-Gluon Plasma; with A.M. Srivastava, *Phys. Rev.* D42, 4228 (1990).

30. Towards a Qualitative Understanding of the Scattering of Topological Defects; with A.M. Srivastava, *Phys. Rev.* D43, 4029 (1991).

31. Cut-Off Field Theory at Finite Temperature; with P. Amte, *Phys. Rev.* D47, 1219 (1993).

32. Semiclassical Decay of Excited String States on Leading Regge Trajectories, with K. Gupta, *Phys. Rev.* D50, 3368 (1994).

33. Frontiers of Physics Lecture Series; *Physics Teacher,* 32,430 (1994).

34. Stability of Black Hole Horizons and the Landau Ghost; with J. Beckenstein, *Phys. Rev.* D50, 7239 (1994).

35. The QCD Vacuum; Particle World, 4, 32 (1995).

36. Deconfinement Transition and Flux-String Models; with A. Momen, *Phys. Rev.* D56, 1437 (1997).

37. Second Stage String Fragmentation Model; with Thamer AI-Aithan, *Phys. Rev. D58: 014018 1998*).

38. A (precision) Cosmological Test of Quantum Mechanics. To be submitted

C. Publications in Conference Proceedings and Books

1. The Dual Model of Neveu and Schwarz: An Introduction and Survey, Memorie Dell'Accademia Delle Scienze Di Torino Classe di Scienze Fisiche, Mathematiche e Naturali, Serie 4^a n. 19 (1974).

2. One Over the umber of Quarks (l/N) as a Small Expansion Parameter for Strong Interactions, proc. of the VI International Colloquium on Multiparticle Dynamics, Oxford, 1975.

3. Baryonium, A Special Kind of Exotica; AlP Conference Proceedings - Particles and Fields 1977. ed. by P.A. Schreiner, G.H. Thomas and A.B. Wicklund (AlP-NY 1978) p. 117.

4. Quarks, Graphs, and the Ordered Approach to Strong Interactions, Proc. of the Conference on hadron Physics at High Energy, Marseilles, France 1978, ed. by C. Bourrely, J. Dash, and J. Soffer.

5. How Now Blue Glue, submitted to *Science '81*.

6. Is There an Iota of Truth to the Glueball Hypothesis, Fourth Annual MRST Meeting, McGill Univ., 1982.

7. The Physics of Monopole Catalysis of Proton Decay, Fifth Annual MRST Meeting, Univ. of Toronto, 1983.

8. A Crucial Probe of the Confinement Mechanism in QCD Linearly Rising Regge Trajectories, *A Passion for Physics*, World Scientific, Singapore 1986.

9. Quark Confinement as a Chromomagnetic Meissner Effect, Talk presented at the APS Meeting, Santa Fe, World Scientific 1985.

10. Proceedings of the XI MRST Meeting on Particle Theory; with K.C. Wali, Syracuse University 1989 (coeditor).

11. A Non-perturbative Model for Glueball Production; with A . Srivastava, *Hadron* 91, ed. by D. Peaselee, World Scientific (Singapore, 1991).