Stanford

Stanley Brodsky

Professor of Particle Physics and Astrophysics, Emeritus

SLAC National Accelerator Laboratory

Curriculum Vitae available Online

Bio

BIO

Recipient of the Watkins Physics Award and Visiting Professorship by the Watkins Foundations at Wichita State University in November, 2017.

Awarded the International Pomeranchuk Prize for 2015.

The Pomeranchuk Prize is a major international award for theoretical physics, awarded annually since 1998 by the Institute for Theoretical and Experimental Physics (ITEP)

from Moscow to one international scientist and one Russian scientist, It is named after Russian physicist Isaak Yakovlevich Pomeranchuk, who together with Lev Landau,

established the Theoretical Physics Department of the Institute. The Laureates for 2015 were Professor Victor Fadin and myself.

Recipient of the 2007 J. J. Sakurai Prize in Theoretical Physics, awarded by the American Physical Society.

Honorary degree of doctor scientiarum honoris causa (dr.scient.h.c.) from Southern Denmark University

Alexander von Humboldt Distinguished U.S. Senior Scientist Award in 1987

Chair of the Hadron Physics Topical Physics Group (GHP) of the American Physical Society, 2010.

ACADEMIC APPOINTMENTS

- Emeritus Faculty, Acad Council, SLAC National Accelerator Laboratory

Publications

PUBLICATIONS

- **Scheme-independent determination of the QCD running coupling at all scales from jet observables using the principle of maximum conformality and infinite-order scale setting** *PHYSICS LETTERS B*
  Di Giustino, L., Brodsky, S. J., Ratcliffe, P. G., Wang, S., Wu, X.
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- **Advances for QCD and the standard model: color-confining light-front holography and the principle of maximum conformality** *EUROPEAN PHYSICAL JOURNAL-SPECIAL TOPICS*
  Brodsky, S. J.
  2025

- **Self-consistent analysis for the η_c→ γγ process** *PHYSICAL REVIEW D*
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- **Quantum chromodynamics resolution of the ATOMKI anomaly in 4He nuclear transitions** *PHYSICAL REVIEW C*
  Kubarovsky, V., West, J., Brodsky, S. J.
  2025; 111 (2)
- **QCD Running Coupling in the Nonperturbative and Near-Perturbative Regimes.** *Physical review letters*
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- **NATURE'S STRONGEST FORCE** *SCIENTIFIC AMERICAN*
  Brodsky, S. J., Deur, A., Roberts, C. D.
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- **Color symmetry and confinement as an underlying superconformal structure in holographic QCD** *INTERNATIONAL JOURNAL OF MODERN PHYSICS A*
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  2024; 39 (09N10)
- **Entropy from entangled parton states and high-energy scattering behavior** *PHYSICS LETTERS B*
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- **High precision tests of QCD without scale or scheme ambiguities** *PROGRESS IN PARTICLE AND NUCLEAR PHYSICS*
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- **QCD running couplings and effective charges** *PROGRESS IN PARTICLE AND NUCLEAR PHYSICS*
  Deur, A., Brodsky, S. J., Roberts, C. D.
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- **Elimination of QCD Renormalization Scale and Scheme Ambiguities**
  Di Giustino, L., Brodsky, S. J., Ratclie, P. G., Wu, X., Wang, S.
  edited by Falcioni, G.
  SISSA Medialab.2024
- **Extending the predictive power of perturbative QCD using the principle of maximum conformality and the Bayesian analysis** *EUROPEAN PHYSICAL JOURNAL C*
  Shen, J., Zhou, Z., Wang, S., Yan, J., Wu, Z., Wu, X., Brodsky, S. J.
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- **Detailed comparison of renormalization scale-setting procedures based on the principle of maximum conformality** *NUCLEAR PHYSICS B*
  Huang, X., Yan, J., Ma, H., Di Giustino, L., Shen, J., Wu, X., Brodsky, S. J.
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- **Heavy quark contribution to the electromagnetic properties of the nucleon** *PHYSICAL REVIEW D*
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- **Predictions for the Sivers single-spin asymmetry from holographic QCD** *PHYSICAL REVIEW D*
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  Mannheim, P. D., Lowdon, P., Brodsky, S. J.
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- **Supersymmetric and Conformal Features of Hadron Physics** *UNIVERSE*
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- **Advances in Light-Front QCD: Supersymmetric Properties of Hadron Physics from Light-Front Holography and Superconformal Algebra** *FEW-BODY SYSTEMS*
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- **Novel all-orders single-scale approach to QCD renormalization scale-setting** *PHYSICAL REVIEW D*
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- **Degeneracy relations in QCD and the equivalence of two systematic all-orders methods for setting the renormalization scale** *PHYSICS LETTERS B*
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