Bernice Durand

PUBLICATIONS

PUBLICATIONS IN REFEREED JOURNALS:

Position operators in relativistic quantum theory: analysis of algebraic operator relationships; Bernice Durand, J. Math. Phys. **14**, 921-933 (1973).

Rapidity amplitudes and their Fourier transforms; Bernice Durand and Lochlainn O'Raifeartaigh, Phys. Rev. D **13**, 99-103 (1976).

Properties of three position operators constructed from free spin-1/2 fields; Bernice Durand, Phys. Rev. D **14**, 1554-1567 (1976).

A model for the A dependence of inclusive hadronic cross sections at large y and small p_perp; Bernice Durand and Jerome Krebs, Phys. Rev. D **21**, 3137-3143 (1980).

Duality for heavy quark systems; Bernice Durand and Loyal Durand, Phys. Rev. D **23**, 1092-1102 (1981).

Duality and corrections to the van Royen-Weisskopf formula; Bernice Durand and Loyal Durand, Phys. Lett. **99B**, 425-428 (1981).

Duality for heavy quark systems II: coupled channels; Bernice Durand and Loyal Durand, Phys. Rev. D **23**, 1531-1538 (1981).

Relativistic duality, and relativistic and radiative corrections for heavy quark systems; Bernice Durand and Loyal Durand, Phys. Rev. D **25**, 2312-2327 (1982).

Duality and radiative corrections to leptonic widths in heavy quark systems; Bernice Durand and Loyal Durand, Phys. Lett. B **113**, 338-342 (1982).

The SVZ method: why it works and why it fails; Bernice Durand,

James Whitenton, and Loyal Durand, Phys. Lett. B **124**, 410-414 (1983).

Analytic solution of the relativistic Coulomb problem for a spinless Salpeter equation; Bernice Durand and Loyal Durand, Phys. Rev. D **28**, 396-406 (1983).

Short-time perturbation theory and nonrelativistic duality; James Whitenton, Bernice Durand, and Loyal Durand, Phys. Rev. D **28**, 597-606 (1983).

The Shifman-Vainshtein-Zakharov method: why it works, why it fails, and ways to improve it; Loyal Durand, Bernice Durand, and James Whitenton, Phys. Rev. D **28**, 607-623 (1983).

Salpeter equation in position space: numerical solution for arbitrary confining potentials; L.J. Nickisch, Loyal Durand, and Bernice Durand, Phys. Rev. D **30**, 660-670 (1984).

Connection of relativistic and nonrelativistic wave functions in the calculation of leptonic widths; Bernice Durand and Loyal Durand, Phys. Rev. D **30**, 1904-1915 (1984).

Improved WKB radial wave functions in several bases; Bernice Durand and Loyal Durand, Phys. Rev. A **33**, 2887-2898 (1986).

Improved Fermi-Segrè formulas for $|(R_{n,l}/r^l)(0)|^2$ for singular and nonsingular potentials; Bernice Durand and Loyal Durand, Phys. Rev. A **33**, 2899-2906 (1986).

Multiplicities without KNO: parton branching versus negative binomial; Bernice Durand and Ina Sarcevic, Phys. Lett. B **172**, 104-108 (1986).

Energy and Regge residues in quantum mechanical ``QCD'' sum rules; Bernice Durand and Loyal Durand, Phys. Rev. D **33**, 3441-3448 (1986).

Multiplicity distributions from branching equations with constant vertex probabilities; B. Durand and I. Sarcevic, Phys. Rev. D **36**, 2693

- 2701 (1987).

Relativistic description of quark-antiquark bound states. Spin-independent treatment; A. Gara, B. Durand, L. Durand, and L.J. Nickisch, Phys. Rev. D **40**, 843-854 (1989).

Relativistic description of quark-antiquark bound states. II. Spin-dependent treatment; A. Gara, B. Durand, and L. Durand, Phys. Rev. D **42**, 1651-1660 (1990).

INVITED PAPERS IN CONFERENCE PROCEEDINGS:

New ideas in e^+e^- and photon induced reactions, Bernice Durand, in *Proceedings for the Conference on New Horizons in Electromagnetic Physics*, University of Virginia, Charlottesville, VA, April, 1982, invited review talk.

Multiplicity distributions as a test of dynamics, with Stephen D. Ellis, in *Design and Utilization of the SSC, Snowmass 1984*, R. Donaldson and J. Morfin, editors, pp. 234-236.

Multiplicity distributions as a test of dynamics, in *Proceedings of the DPF Santa Fe Conference, November, 1984*, invited contribution.

Some comments on alpha_s and Lambda_{MS}, with Robert O. Knuteson, *ibid.*, invited contribution.

Charged hadron multiplicities: a probabilistic parton branching model, in *Hadrons, Quarks, and Gluons*, J. Tran Thanh Van, editor, Editions Frontieres, 1987 (Moriond), pp.623-629.

Multiplicity and A dependence from branching partons, in *Multiparticle Production, Proceedings of the Shandong Workshop*, R. Hwa, editor, World Scientific, 1988, pp. 290-297.

INVITED NONTECHNICAL PAPERS:

"An Intimate Gathering of 1200", for *Review of the Wisconsin Academy of Sciences, Arts, and Letters*, December, 1980, pp. 14-20 (report on 1980 XXth International Conference on High Energy Physics at Madison, WI, and current high energy physics).

"View from the Inside Out", for *Review of the Wisconsin Academy of Sciences, Arts, and Letters*, December, 1984, pp. 54-57 (first-person description of kidney failure and transplantation in the context of medical ethics).

CONTRIBUTED PAPERS IN CONFERENCE PROCEEDINGS:

Some comments on alpha_s and $\text{Lambda}_{\overline{\text{MS}}}$, in *Design and Utilization of the SSC, Snowmass 1984*, R. Donaldson and J. Morfin, editors, pp. 248-250.
Multiplicities without KNO, in *Physics Simulations at High Energy*, V. Barger, T. Gottschalk, F. Halzen, editors, World Scientific, 1987, pp. 186-192.

UNPUBLISHED TECHNICAL REPORTS:

A simple way to teach about optical instruments_Bernice Durand and P.R. Moran, presented at AAPT Wisconsin meeting, April, 1974 (29 pages).

Construction of two-sided, Z-graded pseudo Lie algebras, Bernice Durand, IAS preprint 476 C00-2220-61, 1976 (29 pages). (This was accepted by J. Math. Phys. subject to a few minor revisions. I withdrew it because of the intervening publication by Mathematician Victor Kac of the complete classification of the algebras, now called Lie superalgebras. In retrospect, my approach was so different from that of Kac that I should have published this work. Several subsequent papers have used similar formalisms to mine.)

Determination of $alpha_s$ and estimate of $Lambda_{MS}^{(6)}$ from quarkonium decay widths, Bernice Durand and Robert O. Knuteson, 22 pages, 1986. (The results obtained here, unexpected at the time, have been confirmed by subsequent experiments and theory.)

Jet multiplicities in e^+e^- and antiproton-proton reactions, Robert O. Knuteson and Bernice Durand, 1987.

Hard parton QCD branching contributions to multiplicities and A dependence, Bernice Durand, Raj Gandhi, Tu Zhang, 1989.

New solution for dynamical symmetry breaking with top and bottom quark condensates, Bernice Durand and Tu Zhang, Los Alamos archive hep-ph/9408357, 1994.