

List of Publications

Stefan Bathe

November 15, 2005

1 Major presentations

1. **“Beacons of light—photon emission from hadronic collisions”**
S. Bathe
Invited talk at the April Meeting of the American Physical Society, Dallas, Texas, April 22–25, 2006
2. **“Photon physics at RHIC, lessons for LHC”**
S. Bathe
Invited talk at the 47th Workshop of the INFN Eloisatron Project, “Physics of Hadronic Interactions at LHC with Nucleons and Nuclei and Phase Transition Physics”, the 1st Physics ALICE Week, Erice (Trapani), Italy, December 4–10, 2005
3. **“Direct photons in 200 GeV $p+p$, $d+Au$, and $Au+Au$ ”**
S. Bathe [PHENIX Collaboration]
To appear in the proceedings of the 18th International Conference on Ultrarelativistic Nucleus-Nucleus Collisions, Quark Matter 2005 (QM 2005), Budapest, Hungary, August 4–9, 2005
4. **“Direct photons in PHENIX”**
S. Bathe [PHENIX Collaboration]
To appear in the proceedings of the 5th International Conference on Physics and Astrophysics of Quark Gluon Plasma (ICPAQGP), Calcutta, India, February 8 - 12, 2005
5. **“High p_T π^0 production and angular correlations in 158 AGeV $p+A$ and $Pb+Pb$ collisions”**
S. Bathe [WA98 Collaboration]
Nucl. Phys. A **715**, 729 (2003) [arXiv:nucl-ex/0209022]
Proceedings of 16th International Conference on Ultrarelativistic Nucleus-Nucleus Collisions, Quark Matter 2002 (QM 2002), Nantes, France, July 18–24, 2002
6. **“Direct photons in PHENIX”**
Seminar at the University of Utrecht, The Netherlands, March 23, 2004
7. **“Direct photons in PHENIX”**
Seminar at the Gesellschaft für Schwerionenforschung (GSI), Darmstadt, Germany, March 5, 2004

2 Publications in refereed journals

(A significant contribution was made to those *emphasized*.)

1. **“Measurement of transverse single-spin asymmetries for mid-rapidity production of neutral pions and charged hadrons in polarized $p+p$ collisions at $\sqrt{s} = 200$ GeV”**
S. S. Adler *et al.* [PHENIX Collaboration]
Phys. Rev. Lett. **95**, 202001 (2005) [arXiv:hep-ex/0507073]
2. **“Centrality dependence of direct photon production in $\sqrt{s_{NN}} = 200$ GeV $Au+Au$ collisions”**
S. S. Adler *et al.* [PHENIX Collaboration]
Phys. Rev. Lett. **94**, 232301 (2005) [arXiv:nucl-ex/0503003]

3. “*Measurement of single electron event anisotropy in Au+Au collisions at $\sqrt{s_{NN}} = 200$ GeV*”
S. S. Adler *et al.* [PHENIX Collaboration]
Phys. Rev. C **72**, 024901 (2005) [arXiv:nucl-ex/0502009]
4. “*Mid-rapidity direct-photon production in p + p collisions at $\sqrt{s} = 200$ GeV*”
S. S. Adler *et al.* [PHENIX Collaboration]
Phys. Rev. D **71**, 071102 (2005) [arXiv:hep-ex/0502006]
5. “*Nuclear modification factors for hadrons at forward and backward rapidities in deuteron-gold collisions at $\sqrt{s_{NN}} = 200$ GeV*”
S. S. Adler *et al.* [PHENIX Collaboration]
Phys. Rev. Lett. **94**, 082302 (2005) [arXiv:nucl-ex/0411054]
6. “*Saturation of azimuthal anisotropy in Au+Au collisions at $\sqrt{s_{NN}} = 62$ GeV–200 GeV*”
S. S. Adler *et al.* [PHENIX Collaboration]
Phys. Rev. Lett. **94**, 232302 (2005) [arXiv:nucl-ex/0411040]
7. “*Centrality and transverse momentum dependence of collective flow in 158 AGeV Pb+Pb collisions measured via inclusive photons*”
M. M. Aggarwal *et al.* [WA98 Collaboration]
Nucl. Phys. A **762**, 129 (2005) [arXiv:nucl-ex/0410045]
8. “*Production of ϕ mesons at mid-rapidity in $\sqrt{s_{NN}} = 200$ GeV Au+Au collisions at RHIC*”
S. S. Adler *et al.* [PHENIX Collaboration]
Phys. Rev. C **72**, 014903 (2005) [arXiv:nucl-ex/0410012]
9. “***Formation of dense partonic matter in relativistic nucleus-nucleus collisions at RHIC: Experimental evaluation by the PHENIX collaboration***”
K. Adcox *et al.* [PHENIX Collaboration]
Nucl. Phys. A **757**, 184 (2005) [arXiv:nucl-ex/0410003]
10. “*Centrality dependence of charm production from single electron measurement in Au+Au collisions at $\sqrt{s_{NN}} = 200$ GeV*”
S. S. Adler *et al.* [PHENIX Collaboration]
Phys. Rev. Lett. **94**, 082301 (2005) [arXiv:nucl-ex/0409028]
11. “*Systematic studies of the centrality and $\sqrt{s_{NN}}$ dependence of $dE_T/d\eta$ and $dN_{ch}/d\eta$ in heavy ion collisions at mid-rapidity*”
S. S. Adler *et al.* [PHENIX Collaboration]
Phys. Rev. C **71**, 034908 (2005) [Erratum-ibid. C **71**, 049901 (2005)] [arXiv:nucl-ex/0409015]
12. “*Jet structure of baryon excess in Au+Au collisions at $\sqrt{s_{NN}} = 200$ GeV*”
S. S. Adler *et al.* [PHENIX Collaboration]
Phys. Rev. C **71**, 051902 (2005) [arXiv:nucl-ex/0408007]
13. “*Azimuthal anisotropy of photon and charged particle emission in $^{208}\text{Pb}+^{208}\text{Pb}$ collisions at 158 AGeV/c*”
M. M. Aggarwal *et al.* [WA98 Collaboration]
Eur. Phys. J. C **41**, 287 (2005) [arXiv:nucl-ex/0406022]
14. “*Deuteron and antideuteron production in Au+Au collisions at $\sqrt{s_{NN}} = 200$ GeV*”
S. S. Adler *et al.* [PHENIX Collaboration]
Phys. Rev. Lett. **94**, 122302 (2005) [arXiv:nucl-ex/0406004]
15. “***Double helicity asymmetry in inclusive mid-rapidity π^0 production for polarized p+p collisions at $\sqrt{s} = 200$ GeV***”
S. S. Adler *et al.* [PHENIX Collaboration]
Phys. Rev. Lett. **93**, 202002 (2004) [arXiv:hep-ex/0404027]
16. “*Bose-Einstein correlations of charged pion pairs in Au+Au collisions at $\sqrt{s_{NN}} = 200$ GeV*”
S. S. Adler *et al.* [PHENIX Collaboration]
Phys. Rev. Lett. **93**, 152302 (2004) [arXiv:nucl-ex/0401003]

17. “*Interferometry of direct photons in central $^{208}\text{Pb}+^{208}\text{Pb}$ collisions at 158 AGeV*”
M. M. Aggarwal *et al.* [WA98 Collaboration]
Phys. Rev. Lett. **93**, 022301 (2004) [arXiv:nucl-ex/0310022]
18. “*Measurement of non-random event-by-event fluctuations of average transverse momentum in $\sqrt{s} = 200$ GeV Au+Au and $p + p$ collisions*”
S. S. Adler *et al.* [PHENIX Collaboration]
Phys. Rev. Lett. **93**, 092301 (2004) [arXiv:nucl-ex/0310005]
19. “*High- p_T charged hadron suppression in Au+Au collisions at $\sqrt{s_{NN}} = 200$ GeV*”
S. S. Adler *et al.* [PHENIX Collaboration]
Phys. Rev. C **69**, 034910 (2004) [arXiv:nucl-ex/0308006]
20. “*Identified charged particle spectra and yields in Au+Au collisions at $\sqrt{s_{NN}} = 200$ GeV*”
S. S. Adler *et al.* [PHENIX Collaboration]
Phys. Rev. C **69**, 034909 (2004) [arXiv:nucl-ex/0307022]
21. “*Single identified hadron spectra from $\sqrt{s_{NN}} = 130$ GeV Au+Au collisions*”
K. Adcox *et al.* [PHENIX Collaboration]
Phys. Rev. C **69**, 024904 (2004) [arXiv:nucl-ex/0307010]
22. “ *J/ψ production from proton proton collisions at $\sqrt{s} = 200$ GeV*”
S. S. Adler *et al.* [PHENIX Collaboration]
Phys. Rev. Lett. **92**, 051802 (2004) [arXiv:hep-ex/0307019]
23. “***Absence of suppression in particle production at large transverse momentum in $\sqrt{s_{NN}} = 200$ GeV d+Au collisions***”
S. S. Adler *et al.* [PHENIX Collaboration]
Phys. Rev. Lett. **91**, 072303 (2003) [arXiv:nucl-ex/0306021]
24. “*Scaling properties of proton and anti-proton production in $\sqrt{s_{NN}} = 200$ GeV Au+Au collisions*”
S. S. Adler *et al.* [PHENIX Collaboration]
Phys. Rev. Lett. **91**, 172301 (2003) [arXiv:nucl-ex/0305036]
25. “ *J/ψ production in Au+Au collisions at $\sqrt{s_{NN}} = 200$ GeV at the Relativistic Heavy Ion Collider*”
S. S. Adler *et al.* [PHENIX Collaboration]
Phys. Rev. C **69**, 014901 (2004) [arXiv:nucl-ex/0305030]
26. “*Elliptic flow of identified hadrons in Au+Au collisions at $\sqrt{s_{NN}} = 200$ GeV*”
S. S. Adler *et al.* [PHENIX Collaboration]
Phys. Rev. Lett. **91**, 182301 (2003) [arXiv:nucl-ex/0305013]
27. “***Suppressed π^0 production at large transverse momentum in central Au+Au collisions at $\sqrt{s_{NN}} = 200$ GeV***”
S. S. Adler *et al.* [PHENIX Collaboration]
Phys. Rev. Lett. **91**, 072301 (2003) [arXiv:nucl-ex/0304022]
28. “***Mid-rapidity neutral pion production in proton proton collisions at $\sqrt{s} = 200$ GeV***”
S. S. Adler *et al.* [PHENIX Collaboration]
Phys. Rev. Lett. **91**, 241803 (2003) [arXiv:hep-ex/0304038]
29. “*One-, two-, and three-particle distributions from 158 AGeV/c central Pb+Pb collisions*”
M. M. Aggarwal *et al.* [WA98 Collaboration]
Phys. Rev. C **67**, 014906 (2003) [arXiv:nucl-ex/0210002]
30. “*Centrality dependence of the high p_T charged hadron suppression in Au+Au collisions at $\sqrt{s_{NN}} = 130$ GeV*”
K. Adcox *et al.* [PHENIX Collaboration]
Phys. Lett. B **561**, 82 (2003) [arXiv:nucl-ex/0207009]
31. “*Centrality dependence of charged-neutral particle fluctuations in 158 AGeV $^{208}\text{Pb}+^{208}\text{Pb}$ collisions*”
M. M. Aggarwal *et al.* [WA98 Collaboration]
Phys. Rev. C **67**, 044901 (2003) [arXiv:nucl-ex/0206017]

32. “Measurement of the Λ and $\bar{\Lambda}$ particles in Au+Au collisions at $\sqrt{s_{NN}} = 130$ GeV”
K. Adcox *et al.* [PHENIX Collaboration]
Phys. Rev. Lett. **89**, 092302 (2002) [arXiv:nucl-ex/0204007]
33. “Flow measurements via two-particle azimuthal correlations in Au+Au collisions at $\sqrt{s_{NN}} = 130$ GeV”
K. Adcox *et al.* [PHENIX Collaboration]
Phys. Rev. Lett. **89**, 212301 (2002) [arXiv:nucl-ex/0204005]
34. “Event-by-event fluctuations in mean p_T and mean e_T in $\sqrt{s_{NN}} = 130$ GeV Au+Au collisions”
K. Adcox *et al.* [PHENIX Collaboration]
Phys. Rev. C **66**, 024901 (2002) [arXiv:nucl-ex/0203015]
35. “Net charge fluctuations in Au+Au interactions at $\sqrt{s_{NN}} = 130$ GeV”
K. Adcox *et al.* [PHENIX Collaboration]
Phys. Rev. Lett. **89**, 082301 (2002) [arXiv:nucl-ex/0203014]
36. “Measurement of single electrons and implications for charm production in Au+Au collisions at $\sqrt{s_{NN}} = 130$ GeV”
K. Adcox *et al.* [PHENIX Collaboration]
Phys. Rev. Lett. **88**, 192303 (2002) [arXiv:nucl-ex/0202002]
37. “Transverse mass dependence of two-pion correlations in Au+Au collisions at $\sqrt{s_{NN}} = 130$ GeV”
K. Adcox *et al.* [PHENIX Collaboration]
Phys. Rev. Lett. **88**, 192302 (2002) [arXiv:nucl-ex/0201008]
38. “Centrality dependence of $\pi^\pm$, $K^\pm$, p and $\bar{p}$ production from $\sqrt{s_{NN}} = 130$ GeV Au+Au collisions at RHIC”
K. Adcox *et al.* [PHENIX Collaboration]
Phys. Rev. Lett. **88**, 242301 (2002) [arXiv:nucl-ex/0112006]
39. “Suppression of hadrons with large transverse momentum in central Au+Au collisions at $\sqrt{s_{NN}} = 130$ GeV”
K. Adcox *et al.* [PHENIX Collaboration]
Phys. Rev. Lett. **88**, 022301 (2002) [arXiv:nucl-ex/0109003]
40. “Event-by-event fluctuations in particle multiplicities and transverse energy produced in 158 AGeV Pb+Pb collisions”
M. M. Aggarwal *et al.* [WA98 Collaboration]
Phys. Rev. C **65**, 054912 (2002) [arXiv:nucl-ex/0108029]
41. “Transverse mass distributions of neutral pions from ^{208}Pb -induced reactions at 158 AGeV”
M. M. Aggarwal *et al.* [WA98 Collaboration]
Eur. Phys. J. C **23**, 225 (2002) [arXiv:nucl-ex/0108006]
42. “Measurement of the mid-rapidity transverse energy distribution from $\sqrt{s_{NN}} = 130$ GeV Au+Au collisions at RHIC”
K. Adcox *et al.* [PHENIX Collaboration]
Phys. Rev. Lett. **87**, 052301 (2001) [arXiv:nucl-ex/0104015]
43. “Centrality dependence of charged particle multiplicity in Au+Au collisions at $\sqrt{s_{NN}} = 130$ GeV”
K. Adcox *et al.* [PHENIX Collaboration]
Phys. Rev. Lett. **86**, 3500 (2001) [arXiv:nucl-ex/0012008]
44. “Localized charged-neutral fluctuations in 158 AGeV Pb+Pb collisions”
M. M. Aggarwal *et al.* [WA98 Collaboration]
Phys. Rev. C **64**, 011901 (2001) [arXiv:nucl-ex/0012004]
45. “Three pion interferometry results from central Pb+Pb collisions at 158 AGeV/c”
M. M. Aggarwal *et al.* [WA98 Collaboration]
Phys. Rev. Lett. **85**, 2895 (2000) [arXiv:hep-ex/0008018]

46. “*Scaling of particle and transverse energy production in $^{208}\text{Pb} + ^{208}\text{Pb}$ collisions at 158 AGeV*”
M. M. Aggarwal *et al.* [WA98 Collaboration]
Eur. Phys. J. C **18**, 651 (2001) [arXiv:nucl-ex/0008004]
47. “*Observation of direct photons in central 158 AGeV $^{208}\text{Pb} + ^{208}\text{Pb}$ collisions*”
M. M. Aggarwal *et al.* [WA98 Collaboration]
Phys. Rev. Lett. **85**, 3595 (2000) [arXiv:nucl-ex/0006008]
48. “ *Δ^{++} production in 158 AGeV $^{208}\text{Pb} + ^{208}\text{Pb}$ interactions at the CERN SPS*”
M. M. Aggarwal *et al.* [WA98 Collaboration]
Phys. Lett. B **477**, 37 (2000)
49. “*Central Pb+Pb collisions at 158 AGeV/c studied by $\pi^-\pi^-$ interferometry*”
M. M. Aggarwal *et al.* [WA98 Collaboration]
Eur. Phys. J. C **16**, 445 (2000) [arXiv:hep-ex/0003009]
50. “*Elliptic emission of K^+ and π^+ in 158 AGeV Pb+Pb collisions*”
M. M. Aggarwal *et al.* [WA98 Collaboration]
Phys. Lett. B **469**, 30 (1999)
51. “*Systematics of inclusive photon production in 158 AGeV Pb-induced reactions on Ni, Nb, and Pb targets*”
M. M. Aggarwal *et al.* [WA98 Collaboration]
Phys. Lett. B **458**, 422 (1999) [arXiv:nucl-ex/9903006]
52. “*Freeze-out parameters in central 158 AGeV $^{208}\text{Pb} + ^{208}\text{Pb}$ collisions*”
M. M. Aggarwal *et al.* [WA98 Collaboration]
Phys. Rev. Lett. **83**, 926 (1999) [arXiv:nucl-ex/9901009]
53. “*Centrality dependence of neutral pion production in 158 AGeV $^{208}\text{Pb} + ^{208}\text{Pb}$ collisions*”
M. M. Aggarwal *et al.* [WA98 Collaboration]
Phys. Rev. Lett. **81**, 4087 (1998) [Erratum-ibid. **84**, 578 (2000)] [arXiv:nucl-ex/9806004]
54. “*Search for disoriented chiral condensates in 158 AGeV Pb+Pb collisions*”
M. M. Aggarwal *et al.* [WA98 Collaboration]
Phys. Lett. B **420**, 169 (1998) [arXiv:hep-ex/9710015]

3 Publications in technical journals

(A significant contribution was made to the one *emphasized*.)

1. “*PHENIX calorimeter*”
L. Aphecetche *et al.* [PHENIX Collaboration]
Nucl. Instrum. Meth. A **499**, 521 (2003)
2. “*PHENIX detector overview*”
K. Adcox *et al.* [PHENIX Collaboration]
Nucl. Instrum. Meth. A **499**, 469 (2003)

4 Other Public Presentations

1. “*Direct photons in p+p at 200 GeV*”
S. Bathe [PHENIX Collaboration]
Spring Meeting of the American Physical Society, Tampa, Florida, April 16–19, 2005
2. “*Centrality dependence of π^0 production in Au+Au collisions at $\sqrt{s_{NN}} = 62.4$ GeV*”
S. Bathe [PHENIX Collaboration]
Fall Meeting of the Division of Nuclear Physics of the APS, Chicago, Illinois, October 27–30, 2004

3. ***“High p_T π^0 production in $p + p$, $d+Au$, and $Au+Au$ ”***
S. Bathe [PHENIX Collaboration]
Topics in Heavy Ion Collisions, McGill University, Montreal, Canada, June 25–28, 2003
4. ***“Neutral pion spectra in $Au+Au$ collisions at $\sqrt{s_{NN}} = 130$ GeV”***
S. Bathe [PHENIX Collaboration]
Nuclear Physics Spring Meeting, Münster, Germany, March 11–15, 2002
5. ***“Study of $Pb+Pb$ reactions at 158 AGeV in the WA98 experiment, group report (presented in German)”***
S. Bathe [WA98 Collaboration]
Nuclear Physics Spring Meeting, Erlangen, Germany, March 19–23, 2001
6. ***“Event-by-event analysis of $Pb+Pb$ collisions at 158 AGeV with regard to thermalization (presented in German)”***
S. Bathe [WA98 Collaboration]
Nuclear Physics Spring Meeting, Dresden, Germany, March 20–24, 2000