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# Curriculum Vitae

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I.I. RABI PROFESSOR OF PHYSICS

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MONDAY 6<sup>TH</sup> JULY, 2020

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## PROFESSIONAL APPOINTMENTS:

- I.I. Rabi Professor of Physics, Columbia University: 2015
- Chair, Department of Physics, Columbia University: 2009-2014
- Professor of Physics, Columbia University, 1996 to present
- Associate Professor of Physics, Columbia University, 1990-1996
- Assistant Professor of Physics, Columbia University, 1987-1990
- Assistant Professor of Physics, University of Pennsylvania, 1984-1986
- Postdoctoral Research Fellow, University of Pennsylvania, 1982-1984

## EDUCATION:

- Ph.D. in Physics, 1982, University of California, Berkeley  
Adviser: Prof. K.M. Crowe, Thesis Topic: *Two-Pion Correlations in Heavy Ion Collisions*
- B.S. in Physics, 1975, California Institute of Technology

## HONORS AND AWARDS:

- Fellow, American Association for the Advancement of Science
- Fellow, American Physical Society
- American Physical Society Bonner Prize in Nuclear Physics (2014)
- Outstanding Referee Award, American Physical Society (2016)

## RESEARCH ACTIVITIES:

- Executive Council member for the sPHENIX proposal, 2016 to present
- Executive Council member for the PHENIX BNL RHIC Experiment, 1995-1997, 2006 to present
- Spokesperson, PHENIX Experiment at RHIC, 1997-2006
- Former Institutional Board member for the PHENIX BNL RHIC Experiment
- Former Detector Council member for the PHENIX BNL RHIC Experiment
- Participant, BNL AGS Experiment #866, 1993-1995
- Co-spokesman, BNL AGS Experiment #859, 1990-1993
- Participant, BNL AGS Experiment #910, 1995-1999
- Participant, BNL AGS Experiment #802, 1986-1990
- Participant, CERN ISR Experiment R807, 1982-1986

### RECENT DEPARTMENTAL SERVICE:

- Teaching Assignments Committee, 2019-2020
- Chair, Nevis Retreat Committee 2019
- Ph.D. Examination Committee, Hanjie Liu, 2019
- Colloquium Committee, 2017-2018
- Chair Search Committee, 2017
- Ph.D. Examination Committee, Ryne Carbone, 2017
- Ph.D. Examination Committee, Matthew Smith, 2016
- Ph.D. Examination Committee, Luchang Jin, 2016
- Sponsor, Aaron Veicht Ph.D., 2016
- Undergraduate Committee, 2016-7
- Ph.D. Examination Committee, Jiechen Xu, 2015

### COLUMBIA UNIVERSITY SERVICE:

- Chair, University Tenure Review Advisory Committee, 2017-2018
- University Justice Board (Alternate), 2016 to present
- University Tenure Review Advisory Committee, 2015 to 2018
- Academic Review Committee for the Department of Biological Sciences, 2015
- Columbia College Science Core Course Committee 2013-2015
- Policy and Planning Committee, 2010-2012
- Science Transition Planning Committee, 2009-2010
- Director of Graduate Studies, Department of Physics, 2002-2007
- College Curriculum Committee, 1993-1997

### OTHER ACADEMIC SERVICE:

- Thesis 'opponent', Janus Schmidt-Sørensen, Lund University, 1999
- Outside reader, Vincent Cianciolo, Massachusetts Institute of Technology, 1995
- Outside reader, Richard Morse, Massachusetts Institute of Technology, 1993
- Outside reader, Senta V. Greene Ph.D. thesis, Yale University, 1992

### PROFESSIONAL SERVICE:

- Member, NAS Board of Physics and Astronomy, 2018 start
- Chair, Brookhaven National Laboratory Science and Technology Committee, 2018 start
- External Advisory Committee, JETSCAPE Collaboration, 2016 start
- Dean's Advisory Committee, Laboratory for Nuclear Science, MIT, 2014 start
- NSF Math and Physical Sciences Advisory Committee (MPSAC), 2014 start

- Member of National Science Foundation review of Physics Frontier Centers
- External Review of Duke Physics Department, January, 2018
- Electron Ion Collider Scientific Review Committee, Brookhaven National Laboratory, March 2, 2017
- Committee Member: Research Assessment of the Physical and Chemical Sciences of Utrecht University, February, 2017
- Chair, Director's Review of Nuclear Science Division, Lawrence Berkeley National Laboratory, October 2016
- Chair, Bylaws Committee, sPHENIX Experiment, 2015
- PHENIX Spokesperson Nominating Committee, 2015
- Member, Nuclear Physics Long Range Planning Group, 2015
- Chair, Writing Committee, for the "Hot QCD" White Paper, 2014-2015
- Director's Review of the Instrumentation Division, Brookhaven National Laboratory, 2015
- NSF MPSAC liaison to Astronomy Division Committee of Visitors
- NSF MPSAC liaison to High Energy Physics subcommittee on response to P5 recommendations, 2015
- Chair, Division of Nuclear Physics Nominating Committee, 2014
- Member, Division of Nuclear Physics Bonner Prize Committee, 2014
- Program Committee, Japanese Program Accelerator Research Complex (J-PARC), 2014-2019
- Task Force on Re-Imagining the April Meeting of the American Physical Society, 2013-2014
- Nominating Committee, American Physical Society Division of Nuclear Physics, 2013
- Director's Review Committee, Nuclear Science Division, Lawrence Berkeley National Laboratory, 2012
- Review Committee, Thomas Jefferson National Laboratory, 2012
- Associate Laboratory Director Search Committee, Brookhaven National Laboratory, 2012
- Chair, PHENIX Spokesperson Nominating Committee, 2012
- Chair, Program Committee for APS April 2012 Meeting.
- Chair, Division of Nuclear Physics Mentoring Award Committee, 2012
- NRC Committee on Assessment and Outlook for Nuclear Physics, 2010-2012
- Review Committee, Extreme Matter Institute, Helmholtz Alliance, Darmstadt, Germany 2011
- Review Committee, Center for Nuclear Physics and Astrophysics, U. of Washington, 2011
- Chair, Division of Nuclear Physics Dissertation Prize Committee, 2011
- Vice-Chair, Program Committee for APS April 2011 Meeting.
- Chair, APS Division of Nuclear Physics, 2010-11.
- Chair-Elect, APS Division of Nuclear Physics, 2009-10.
- Review Committee, Chief Scientist of RIKEN Radiation Laboratory (Tokyo), 2009
- Deputy Chair, APS Division of Nuclear Physics, 2008-9.
- Co-Organizer, AAAS Symposium "Quest for the Perfect Liquid: Connecting Heavy Ions, String Theory, and Cold Atoms", February 2008.
- Review Committee, Instrumentation Division, Brookhaven National Laboratory, 2008
- Review Committee, Center for Nuclear Physics and Astrophysics, U. of Washington, 2008
- Review Committee, Wright Nuclear Structure Laboratory, Yale University, 2007

- Member, Nuclear Physics Long Range Planning Group, 2007.
- Advisory Committee, Institute for Nuclear Theory (2007 -2009)
- Science Council, Jefferson National Laboratory (2007 start)
- Science and Technology Steering Committee, Brookhaven Science Associates (2006 start).
- NSAC Subcommittee on Implementation of 2002 Long Range Plan, March-June, 2005.
- Executive Committee, Division of Nuclear Physics, 2004-6.
- External Review Committee of Wayne State University Physics Department, February, 2005
- NSAC (Nuclear Science Advisory Committee), 2004-present.
- Member, National Task Force on High Energy Density Physics, 2003-4
- NSAC Subcommittee on Categorizing Future Facilities, February, 2003.
- Editorial Committee, *Annual Reviews of Nuclear and Particle Science*, 2002-2007.
- Member, U.S Nuclear Physics Long Range Plan Working Group, 2001.
- Fellowship Committee, Division of Nuclear Physics, 2001-2
- Member, U.S Nuclear Physics Long Range Plan Working Group, 1995
- Co-convenor, Heavy Ion Town Meeting, January 1995
- Program Committee, Division of Nuclear Physics, 1994-6
- AGS Users Executive Committee (1991-3).
- Nuclear Physics representative to ESNet Steering Committee, (1990-93).
- Referee, *Physics Reports*.
- Referee, *Physical Review Letters*.
- Referee, *Physical Letters B*.
- Referee, *Reviews of Modern Physics*.
- Reviewer, von Helmholtz Research Foundation.
- Divisional Associate Editor for Nuclear Physics for *Physical Review Letters*, 1996-9.
- Grant reviewer, Department of Energy
- Grant reviewer, National Science Foundation
- Nuclear Physics Program Representative to the ESnet Steering Committee (1993-94)
- Technical Review Committee for BNL Experiment #896, 1992.

### CONFERENCE ORGANIZING COMMITTEES:

- International Advisory Committee, Quark Matter 2019
- International Advisory Committee, Quark Matter 2018
- Local Organizing Committee, Quark Matter 2017
- International Advisory Committee, Quark Matter 2015
- 7th International Conference on Physics and Astrophysics of Quark Gluon Plasma , February 2015
- International Advisory Committee, Quark Matter 2014.

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- Organizing Committee, W.J. Willis Memorial Symposium, Brookhaven National Laboratory, April 2013.
  - International Advisory Committee, Quark Matter 2012.
  - International Advisory Committee, Quark Matter 2011.
  - International Advisory Committee, Rutherford Centennial Conference on Nuclear Physics, Manchester, U.K., August, 2010.
  - International Advisory Committee, International Conference on Strangeness in Quark Matter (SQM2009), October 2009.
  - International Advisory Committee, International Conference on Nucleus-Nucleus Collisions, August 2009.
  - International Advisory Committee, Quark Matter 2009.
  - International Organizing Committee, Particles and Nuclei in Collision, November, 2008.
  - International Advisory Committee, Workshop on Particle Correlation and Femtoscopy (WPCF), September, 2008.
  - International Advisory Committee, International Conference on High Energy Physics, August, 2008.
  - Organizing Committee, BNL Symposium on RHIC and Its Impact on Nuclear Science, May, 2008.
  - International Advisory Committee, Quark Matter 2008.
  - International Advisory Committee, International Conference on Strangeness in Quark Matter (SQM2007), June 2007.
  - International Advisory Committee, Hadron Collider Physics Symposium 2007.
  - International Advisory Committee, International Conference on Nuclear Physics, June, 2007.
  - International Advisory Committee, Workshop on Particle Correlation and Femtoscopy (WPCF), September, 2006.
  - International Advisory Committee, Quark Matter 2006.
  - International Advisory Committee, Hadron Collider Physics Symposium 2006.
  - International Advisory Committee, International Conference on Strangeness in Quark Matter (SQM2006), March 2006.
  - International Organizing Committee, Particles and Nuclei in Collision, 2005.
  - International Advisory Committee, Quark Matter 2005.
  - International Organizing Committee, Fifth International Conference on Physics and Astrophysics of Quark-Gluon Plasma, February, 2005.
  - International Advisory Committee, International Conference on Strangeness in Quark Matter (SQM2004), September 2004.
  - International Advisory Committee, International Conference on Strangeness in Quark Matter (SQM2003), March 2003.

- International Advisory Committee, International Conference on Particles and Nuclei (PANIC2002), September 2002.
- Program Committee, Workshop on QCD and Experimental Physics Program at RHIC, Beijing, China, August 2002.
- International Organizing Committee, Quark Matter 2002.
- International Organizing Committee, Pan American Study Institute (PASI) on New States of Matter in Hadronic Interactions, January 2002.
- International Organizing Committee, Cracow Epiphany Conference on Quarks and Gluons in Extreme Conditions, January 2002.
- International Organizing Committee, 6th International Conference on Strange Quarks in Matter, September 2002.
- International Organizing Committee, Fourth International Conference on Physics and Astrophysics of Quark-Gluon Plasma, September, 2001.
- International Organizing Committee, Quark Matter 2001.
- Co-convenor for Relativistic Heavy Ion Collisions, 30th International Symposium on Multiparticle Dynamics, October 2000.
- International Organizing Committee, International Symposium on Nuclear Physics 2000.
- International Organizing Committee, Hadron Collider Physics 1999.
- International Organizing Committee, CRIS98-Cantania Relativistic Ion Studies
- Co-Organizer, International Workshop on Particle Interferometry in High Energy Heavy Ion Reactions , September 1996
- Organizing Committee, Brookhaven Theory Workshop on Relativistic Heavy Ions, July 1996
- Co-Organizer, INT Workshop on Electromagnetic Probes of the QGP, January 1996
- Co-Organizer, International Workshop on Particle Interferometry in High Energy Heavy Ion Reactions , September 1996
- Organizing Committee, Brookhaven Theory Workshop on Relativistic Heavy Ions, July 1996
- Co-Organizer, INT Workshop on Electromagnetic Probes of the QGP, January 1996
- International Organizing Committee, Relativistic Aspects of Nuclear Physics, 1995
- Co-convenor, Heavy Ion Session, 5th Conference on the Intersections of Particle and Nuclear Physics (1994)
- Co-convenor, Heavy Ion Session, 27th Int. Conference on High Energy Physics (1994)
- Organizing Committee, Second Conference on Heavy Ion Physics at the AGS (1993)
- Organizing Committee, First Conference on Heavy Ion Physics at the AGS (1992)
- Co-convenor, Heavy Ion Session, 26th Int. Conference on High Energy Physics (1992)

# 1 Publications

- [1] W. Lennard et al., *Absolute Transition Probabilities in Ni I*, Nucl. Instr. and Meth. **110** (1973) 385.
- [2] C. Martoff et al., *Orbital Recoupling Dominance in the A=20 Giant M1 Transition*, Phys. Rev. Lett. **46** (1981) 891.
- [3] K. Frankel, J. Bistirlich, R. Bossingham, H. Bowman, K. Crowe, et al., *PIONS PRODUCED NEAR THE CENTER-OF-MASS VELOCITY IN HEAVY ION COLLISIONS*, Phys.Rev. **C25** (1982) 1102–1104.
- [4] J. Sullivan, J. Bistirlich, H. Bowman, R. Bossingham, T. Buttke, et al., *STRONG COULOMB EFFECTS ON PIONS PRODUCED IN HEAVY ION COLLISIONS*, Phys.Rev. **C25** (1982) 1499–1517.
- [5] C. Martoff, J. Bistirlich, C. Clawson, K. Crowe, M. Koike, et al., *SPIN FLIP TRANSITIONS IN C-13 AND F-19 PROBED WITH THE (PI-, GAMMA) REACTION*, Phys.Rev. **C27** (1983) 1621–1635.
- [6] W. Zajc, J. Bistirlich, R. Bossingham, H. Bowman, C. Clawson, et al., *TWO PION CORRELATIONS IN HEAVY ION COLLISIONS: MEASUREMENT OF SOURCE DIMENSIONS USING PION INTERFEROMETRY. (TALK, ABSTRACT ONLY)*, Helv.Phys.Acta **56** (1983) 978.
- [7] Axial Field Spectrometer Collaboration Collaboration, T. Akesson et al., *THE DOMINANCE OF JETS AT LARGE TRANSVERSE ENERGY IN A FULL AZIMUTH HADRON CALORIMETER AT ISR ENERGIES*, Phys.Lett. **B128** (1983) 354.
- [8] Axial Field Spectrometer Collaboration Collaboration, T. Akesson et al., *A COMPARISON OF HADRON PRODUCTION IN  $p$  anti- $p$  AND  $p$   $p$  COLLISIONS IN THE CENTRAL REGION AT  $s^{*(1/2)} = 53$ -GeV*, Nucl.Phys. **B228** (1983) 409.
- [9] Axial Field Spectrometer Collaboration Collaboration, T. Akesson et al., *BOSE-EINSTEIN CORRELATIONS IN  $\alpha$   $\alpha$ ,  $p$   $p$  AND  $p$  anti- $p$  INTERACTIONS*, Phys.Lett. **B129** (1983) 269.
- [10] Axial Field Spectrometer Collaboration Collaboration, T. Akesson et al., *A STUDY OF EXCLUSIVE CENTRAL HADRON PRODUCTION AT THE ISR AS A SEARCH FOR GLUONIUM STATES*, Phys.Lett. **B133** (1983) 268.
- [11] H. Gordon, T. Killian, T. Ludlam, I. Stumer, M. Winik, et al., *P(T) AND E(T) MULTIPLICITY CORRELATIONS IN P P, P ALPHA AND ALPHA ALPHA INTERACTIONS AT  $S^{*(1/2)} = 31.5$ -GEV AND 44-GEV*, Phys.Rev. **D28** (1983) 2736–2740.
- [12] W. Zajc, J. Bistirlich, R. Bossingham, H. Bowman, C. Clawson, et al., *TWO PION CORRELATIONS IN HEAVY ION COLLISIONS*, Phys.Rev. **C29** (1984) 2173–2187.
- [13] Axial Field Spectrometer Collaboration Collaboration, T. Akesson et al., *Anti-Baryon Production in the Central Region at the ISR*, Nucl.Phys. **B246** (1984) 1–11.
- [14] Axial Field Spectrometer Collaboration Collaboration, T. Akesson et al., *PROPERTIES OF JETS IN HIGH E(T) EVENTS PRODUCED IN  $p$   $p$  COLLISIONS AT  $s^{*(1/2)} = 63$ -GeV*, Z.Phys. **C25** (1984) 13.
- [15] Axial Field Spectrometer Collaboration Collaboration, T. Akesson et al., *A MEASUREMENT OF ALPHA-ALPHA ELASTIC SCATTERING AT THE CERN ISR*, Phys.Lett. **B152** (1985) 140.
- [16] Axial Field Spectrometer Collaboration Collaboration, T. Akesson et al., *Production of Prompt Positrons at Low Transverse Momentum in 63 GeV  $p$   $p$  Collisions at the CERN Intersecting Storage Rings*, Phys.Lett. **B152** (1985) 411–418.
- [17] Axial Field Spectrometer Collaboration Collaboration, T. Akesson et al., *BOSE-EINSTEIN CORRELATIONS BETWEEN KAONS*, Phys.Lett. **B155** (1985) 128.
- [18] Axial Field Spectrometer Collaboration Collaboration, T. Akesson et al., *RAPIDITY AND CHARGE CORRELATIONS OF CENTRALLY PRODUCED CHARGED PARTICLES IN EVENTS WITH A HIGH MOMENTUM  $\pi^0$  NEAR 11-DEGREES*, Phys.Rev. **D31** (1985) 976–983.
- [19] K. Frankel, J. Bistirlich, R. Bossingham, H. Bowman, K. Crowe, et al., *PION PRODUCTION NEAR MID-RAPIDITY IN HIGH-ENERGY HEAVY ION COLLISIONS*, Phys.Rev. **C32** (1985) 975–982.
- [20] AXIAL FIELD SPECTROMETER COLLABORATION Collaboration, T. Akesson et al., *DIJET PRODUCTION CROSS-SECTION AND FRAGMENTATION OF JETS PRODUCED IN P P COLLISIONS AT  $S^{*(1/2)} = 63$ -GEV*, Z.Phys. **C30** (1986) 27–43.
- [21] Axial Field Spectrometer Collaboration Collaboration, T. Akesson et al., *A comparison of direct photon,  $\pi^0$ , and  $\eta$  production in  $p$  anti- $p$  and  $pp$  interactions at the CERN ISR*, Phys.Lett. **B158** (1985) 282–288.
- [22] Axial Field Spectrometer Collaboration Collaboration, T. Akesson et al., *A SEARCH FOR GLUEBALLS AND A STUDY OF DOUBLE POMERON EXCHANGE AT THE CERN INTERSECTING STORAGE RINGS*, Nucl.Phys. **B264** (1986) 154.

- [23] AXIAL FIELD SPECTROMETER COLLABORATION Collaboration, T. Akesson et al., *SEARCH FOR QUARK DECONFINEMENT: STRANGENESS PRODUCTION IN P P, D D, P ALPHA, AND ALPHA ALPHA COLLISIONS AT  $S(NN)^{1/2} = 31.5\text{-GeV} - 44\text{-GeV}$* , Phys.Rev.Lett. **55** (1985) 2535–2538.
- [24] W. A. Zajc, *KNO SCALING ISN'T WHAT IT USED TO BE*, Phys.Lett. **B175** (1986) 219.
- [25] Axial Field Spectrometer Collaboration Collaboration, T. Akesson et al., *A STUDY OF THE PRODUCTION OF TWO DIRECT PHOTONS IN p p COLLISIONS AT THE CERN ISR*, Z.Phys. **C32** (1986) 491–497.
- [26] Axial Field Spectrometer Collaboration Collaboration, T. Akesson et al., *THREE JET PRODUCTION IN p p COLLISIONS AT  $S^{1/2} = 63\text{-GeV}$  AND A DETERMINATION OF  $\alpha_s$* , Z.Phys. **C32** (1986) 317.
- [27] Axial Field Spectrometer Collaboration Collaboration, T. Akesson et al., *INCLUSIVE eta PRODUCTION AT LOW TRANSVERSE MOMENTUM IN 63-GeV p p COLLISIONS AT THE CERN INTERSECTING STORAGE RINGS*, Phys.Lett. **B178** (1986) 447.
- [28] W. A. Zajc, *Monte Carlo Computational Methods for the Generation of Events with Bose-Einstein Correlations*, Phys.Rev. **D35** (1987) 3396.
- [29] Axial Field Spectrometer Collaboration Collaboration, T. Akesson et al., *EVIDENCE FOR A DIRECTIONAL DEPENDENCE OF BOSE-EINSTEIN CORRELATIONS AT THE CERN INTERSECTING STORAGE RINGS*, Phys.Lett. **B187** (1987) 420.
- [30] Axial Field Spectrometer Collaboration Collaboration, T. Akesson et al., *PION INTERFEROMETRY IN JET EVENTS AT THE CERN INTERSECTING STORAGE RINGS*, Z.Phys. **C36** (1987) 517.
- [31] E-802 Collaboration Collaboration, T. Abbott et al., *MEASUREMENT OF ENERGY EMISSION FROM O + A AND p + A COLLISIONS AT 14.5-GeV/c PER NUCLEON WITH A LEAD GLASS ARRAY*, Phys.Lett. **B197** (1987) 285–290.
- [32] E-802 Collaboration Collaboration, T. Abbott et al., *MEASUREMENT OF ENERGY AND CHARGED PARTICLE EMISSION IN THE CENTRAL RAPIDITY REGION FROM O + A AND p + A COLLISIONS AT 14.5-GeV/c PER NUCLEON AND PRELIMINARY RESULTS FROM Si + A COLLISIONS*, Z.Phys. **C38** (1988) 35.
- [33] A. Chacon, J. Bistirlich, R. Bossingham, H. Bowman, C. Clawson, et al., *OBSERVATION OF A NONSPHERICAL PION SOURCE IN RELATIVISTIC HEAVY ION COLLISIONS*, Phys.Rev.Lett. **60** (1988) 780–783.
- [34] E802 COLLABORATION Collaboration, Y. Miake et al., *PRELIMINARY SPECTROMETER RESULTS FROM E-802*, Z.Phys. **C38** (1988) 135–139.
- [35] E-802 Collaboration Collaboration, T. Abbott et al., *PROTON PRODUCTION FROM Si + Au COLLISIONS AT 14.5/A-GeV*, Nucl.Phys. **A498** (1989) 409–414.
- [36] E802 Collaboration Collaboration, P. Vincent et al., *RESULTS FROM THE BNL E802 SPECTROMETER FOR 14.5-GEV/C PER NUCLEON SILICON BEAMS*, Nucl.Phys. **A498** (1989) 67C–78C.
- [37] E802 COLLABORATION Collaboration, H. Hamagaki et al., *PARTICLE SPECTRA NEAR MID-RAPIDITY STUDIED WITH CHERENKOV COMPLEX SYSTEM IN 14.5-A/GEV SI + AU COLLISIONS*, Nucl.Phys. **A498** (1989) 415C–420C.
- [38] AXIAL FIELD SPECTROMETER COLLABORATION Collaboration, T. Akesson et al., *MEASUREMENTS OF D (SIGMA) DE (T) IN COLLISIONS OF LIGHT NUCLEI AT  $S(NN)^{1/2} = 31.5\text{-GeV}$* , Phys.Lett. **B231** (1989) 359–364.
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- [44] E-802 Collaboration Collaboration, T. Abbott et al., *Anti-proton production in 14.6-A/GeV/c Si + A collisions*, Phys.Lett. **B271** (1991) 447–452.
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- [53] E-802 Collaboration Collaboration, Y. Akiba et al., *Bose-Einstein correlation of kaons in Si + Au collisions at 14.6-A/GeV/c*, Phys.Rev.Lett. **70** (1993) 1057–1060.
- [54] E-802 Collaboration Collaboration, L. Ahle et al., *Global transverse energy distributions in Si + Al, Au at 14.6-A/GeV/c and Au + Au at 11.6-A-GeV/c*, Phys.Lett. **B332** (1994) 258–264.
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- [58] E802 Collaboration. Collaboration, G. Stephans et al., *Recent results from E859 using Si beams at 14.6-A/GeV/c*, Nucl.Phys. **A566** (1994) 269C–276C.
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- [63] E802 Collaboration Collaboration, F. Videbaek et al., *Recent results from E866*, Nucl.Phys. **A590** (1995) 249C–258C.
- [64] E-802 Collaboration Collaboration, Y. Akiba et al., *Production of Phi mesons in central Si-28 + Au-196 collisions at 14.6-A/GeV/c*, Phys.Rev.Lett. **76** (1996) 2021–2024.
- [65] E802 Collaboration Collaboration, Y. Akiba et al., *Two-particle rapidity correlations from the Bose-Einstein effect in central Si-28 + Au collisions at 14.6-A-GeV/c and intermittency*, Phys.Rev. **C56** (1997) 1544–1552.
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- [69] W. Zajc, *Interferometry: New ideas and new directions*, Nucl.Phys. **A525** (1991) 315C–326C.
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## 4 Invited Talks and Lectures

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- [5] *Systematic Aspects of Bose-Einstein Correlations*, Shandong Workshop on Multiparticle Production, Jinan, Shandong, China, July 1, 1987.
- [6] *New Results from the Brookhaven and CERN Heavy Ion Programs*, Third International Conference on Intersections Between Particle and Nuclear Physics, Rockport, Maine, May 25, 1988.
- [7] *Methods of Experimental Heavy Ion Physics*, 4 Lectures presented at the Brookhaven Summer School on Heavy Ion Physics, Brookhaven National Laboratory, July 11-15, 1987.
- [8] *Comparison of Nucleus-Nucleus and Proton-Nucleus Collisions at AGS Energies*, APS Division of Nuclear Physics Annual Meeting, October 13, 1989.
- [9] *Bose-Einstein Measurements in Heavy Ion Collisions*, presented at "Heavy Ion Physics at the AGS", Brookhaven National Laboratory, March 6, 1990.
- [10] *Interferometry in Nuclear Collisions*, rapporteur talk, Quark Matter '90, Menton, France, May 7-11, 1990.
- [11] *Review of Bose-Einstein Correlations in pp and p-A Collisions*, presented at the 4th Conference on the Intersections between Particle and Nuclear Physics, Tucson, AZ, 24-May-1991.
- [12] *Phenomenology of Relativistic Heavy Ion Collisions*, four lectures presented at the Fourth Annual Summer School in Nuclear Physics Research, Madison, WI June 17-28, 1991.
- [13] *Recent Developments in Hadron Interferometry*, 21st International Symposium on Multiparticle Dynamics, Wuhan, China, 24-Sep-91.
- [14] *Recent Results from E802 and E859*, Invited Talk at Quark Matter '91, Gatlinburg, TN, 13-Nov-91.
- [15] *Critical Evidence for Quark Gluon Plasma*, Invited Talk at *Physics in Collision*, Boulder, CO, 10-Jun-1992.
- [16] *Intensity Interferometry*, two lectures at the NATO Advanced Study Institute on Particle Production in Highly Excited Matter, Lucca, Italy, July 12-24, 1992.
- [17] *Heavy Ion Collisions at Relativistic Energies*, XV Workshop on Nuclear Physics in Brazil, Caxambu, Brazil, 11-Sep-92.
- [18] *Exploring Dense Nuclear Matter with Heavy Ion Collisions* International Symposium on Medium Energy Physics, Beijing, China, August 22-26, 1994.
- [19] *Future Opportunities in Heavy Ion Physics* APS Division of Nuclear Physics Annual Meeting, Williamsburg, VA, October 26-28, 1994.
- [20] *HBT in STAR/PHENIX/ALICE*, QM95 Workshop on Physics with the Collider Detectors at RHIC and LHC, Monterey, CA, 08 January 1995.
- [21] *HBT: Past, Present and Future*, International Symposium on Quantum Interferometry Studies in Nuclear Collisions, Hiroshima, Japan, 17-20 Apr, 1995.
- [22] *Experimental Summary*, summary talk at the INT Workshop on Electromagnetic Probes of the Plasma, Seattle, WA, January 1996.
- [23] *PHENIX Physics*, presented at the RHIC Theory Workshop, Brookhaven National Laboratory, July 1996.
- [24] *Precision Two-Particle Correlations in E859*, presented at the II Trento Workshop on HBT, Trento, Italy, September 1996.
- [25] *Investigating the Phases of Nuclear Matter*, invited plenary talk at the Division of Nuclear Physics meeting, October, 1996.
- [26] *High  $p_T$  Physics with PHENIX*, presented at the LBNL/INT workshop on RHIC Physics, February 1997.
- [27] *Imaging the Final-State Phase Space in Heavy Ion Collisions*, presented at Nucleus-Nucleus 97, Gatlinburg, TN, June 1997.
- [28] *The PHENIX Physics Program at RHIC*, presented at the 5th International Conference on Relativistic Aspects of Nuclear Physics, Rio de Janeiro, Brazil, Aug 1997.

- [29] *Day-1 Physics at RHIC*, conference summary talk for the the RHIC Winter Workshop at LBNL, January 1998.
- [30] *Experimental Methods*, 3 lectures presented at the RHIC Theory Summer School, Brookhaven National Laboratory, July 1998.
- [31] *PHENIX Overview*, presented at the RIKEN/BNL Workshop on Quarkonium, Brookhaven National Laboratory, September 1998.
- [32] *Searching for the Quark-Gluon Plasma at RHIC*, Boston Physics Department Colloquium, March 30, 1999.
- [33] *Collider Detectors for Heavy Ion Physics*, presented at Instrumentation '99 Conference, Hammamatsu City, Japan, November 1999.
- [34] *Relativistic Heavy Ion Collisions: The Past Through the Future*, presented at the 7th Conference on the Intersections between Particle and Nuclear Physics, Quebec City, Canada, May 2000.
- [35] *RHIC Experimental Review*, presented at the RIKEN/BNL Workshop on Transversity, Brookhaven National Laboratory, September 2000.
- [36] *A Pedestrian's Guide to RHIC and Its Experiments*, presented at student mini-symposium for Quark Matter 2001, Stony Brook, NY, January 2001.
- [37] *PHENIX Overview*, presented at Quark Matter 2001, Stony Brook, NY, January 2001.
- [38] *Introduction to RHIC Physics Upgrades*, presented at Nuclear Physics Long Range Planning meeting, Sante Fe, NM, March 2001.
- [39] *Introduction to RHIC Science*, presented to the HEPAP sub-panel on the Future Direction of High Energy Physics, Brookhaven National Laboratory, April 2001.
- [40] *RHIC and the Search for Quark-Gluon Plasma Formation*, presented at the 27th International Conference on Anomalous Absorption in Plasmas, Sedona, AZ, June 2001.
- [41] *Results from RHIC Run-1*, presented at the 2001 SLAC Summer Study Institute, Palo Alto, CA August 2001.
- [42] *A Year at RHIC*, presented at the 2001 Erice School on New Forms of Matter, Erice, Italy, August 2001.
- [43] *The PHENIX Physics Program at RHIC* (2 lectures), and *HBT Tutorial* (2 lectures), presented at the 2002 Pan American Study Institute, Sao Paulo, Brazil, January 2002.
- [44] *First Results from RHIC*, presented at the Annual Meeting of the American Physical Society, Albuquerque, NM April 2002.
- [45] *The Quest for Old Physics at RHIC*, California Institute of Technology Physics Seminar, February 27, 2003.
- [46] *The Science of RHIC*, University of Chicago Physics Department Colloquium, May 15, 2003.
- [47] *Recent Discoveries at RHIC- Do They Indicate a New State of Matter?*, Fermi National Accelerator Laboratory Colloquium, July 30, 2003.
- [48] *Recent Discoveries at RHIC- Do They Indicate a New State of Matter?*, University of Wisconsin Physics Department Colloquium, October 17, 2003.
- [49] *RHIC and the Universe*, presented at the Annual Meeting of the Division of Nuclear Physics, Tucson, AR, October 2003.
- [50] *Recent Discoveries at RHIC- Do They Indicate a New State of Matter?*, Rutgers University Physics Department Colloquium, February 4, 2004.
- [51] *Recent Discoveries at RHIC*, Peter Axel Memorial Lecture, University of Illinois Urbana-Champaign, April 2004.
- [52] *Recent Discoveries at RHIC- Do They Indicate a New State of Matter?*, Duke University Physics Department Colloquium, April 4, 2004.
- [53] *The Search for New States of Matter at RHIC*, presented at the 50th Anniversary Jubilee of the Physics Department of Weizmann Institute, May 2004.
- [54] *PHENIX Highlights and Discoveries*, presented at the RBRC Workshop on the Strongly Interacting QGP, May 2004.
- [55] *Experimental Review of Hard Processes*, presented at Rencontres du Vietnam, Hanoi, Vietnam August 2004.
- [56] *RHIC Experimental Overview: What We Have (not) Learned*, presented at QCD and String Theory, Kavli Institute, Santa Barbara, November 2004.
- [57] *Pursuing the Perfect Primordial Fluid: Reproducing the Early Universe at RHIC*, presented at Kyoto Symposium on Phase Transitions, Kyoto, Japan, February 2005.
- [58] *Pursuing the Perfect Primordial Fluid: Reproducing the Early Universe at RHIC*, presented at Frontiers of Physics in the 21st Century, AAAS Meeting, Washington, D.C., February 2005.
- [59] *RHIC II Science and Perspective*, presented at Particles and Nuclei in Collision 2005, Sante Fe, New Mexico, October 2005.
- [60] *The Fluid Nature of Quark-Gluon Plasma*, University of Illinois Physics Department Colloquium, April 6, 2006.
- [61] *J/Ψ's at RHIC*, Brookhaven National Laboratory Symposium for Helmut Satz, May 9, 2006.



- [62] *New Dimensions in Relativistic Heavy Ion Collisions*, presented at “Nuclear Physics- The Core of Matter, The Fuel of Stars; Argonne Symposium Celebrating John Schiffer”, Argonne National Laboratory, September 22, 2006.
- [63] *Fundamental Investigations in QCD*, plenary symposium on Future Directions in Nuclear Physics, Division of Nuclear Physics meeting, Nashville, TN; September 22, 2006.
- [64] *RHIC II Upgrade and Science Program*, QCD Town Meeting for the Nuclear Physics Long Range Plan, Rutgers University; January 13, 2007.
- [65] *The Fluid Nature of Quark-Gluon Plasma*, invited talk presented at Deep Inelastic Scattering 2007 (DIS07), Munich, Germany; April 16, 2007.
- [66] *The Fluid Nature of Quark-Gluon Plasma*, invited talk presented at the International Conference on Nuclear Physics (INPC07), Tokyo, Japan; June 7, 2007.
- [67] *The Fluid Nature of Quark-Gluon Plasma*, invited talk presented at the Gordon Research Conference on Nuclear Physics, Newport, RI; July 17, 2007.
- [68] *Directions in Nuclear and Particle Physics*, invited talk at the Symposium on the 60th anniversary of Brookhaven National Laboratory, BNL; October 19, 2007.
- [69] *Limits on the Viscosity to Entropy Density Ratio from PHENIX Data on Single Electron Production*, invited talk at the 24th Winter Workshop on Nuclear Dynamics, South Padre Island, TX, April 7, 2008.
- [70] *How RHIC Discovered the Fluid Formerly Known as QGP*, invited talk at the Institute for Nuclear Theory Workshop “From Strings to Things”, May 2008.
- [71] *Quark-Gluon Plasma at RHIC (and in QCD and String Theory)*, invited talk at the PASCOS08 Symposium, Perimeter Institute, Waterloo, Canada, May 2008.
- [72] *Experimental Summary*, invited talk at Strange Quark Matter 2008, Beijing, China, October, 2008.
- [73] *Exploring the Lower Limits of Perfection*, invited talk at Division of Nuclear Physics workshop on “Quantifying the Nature of the sQGP”, October, 2008.
- [74] *The Fluid Nature of Quark-Gluon Plasma*, University of Michigan Physics Department Colloquium, November 19, 2008.
- [75] *The Fluid Nature of Quark-Gluon Plasma*, Harvard University Physics Department Colloquium, March 9, 2009.
- [76] *The Fluid Nature of Quark-Gluon Plasma*, 1st Zev Frankel Memorial Lecture, the Weizmann Institute, Rehovot, Israel, March 12, 2009.
- [77] *Creating a Coherent Account of Chaotic Correlations*, Symposium in Honor of Prof. Miklos Gyulassy’s 60th Birthday, Lawrence Berkeley National Laboratory, March 27, 2009.
- [78] *Pre-Summary: Puzzles, Progress, Prospects*, opening talk at Quark Matter 2009, Knoxville, TN, March 2009.
- [79] *Heavy Ion Physics “versus” AdS/CFT*, workshop on “New Ideas in Hadronization: Intersections between QCD, AdS/CFT and the QGP”, Durham, U.K., April 2009.
- [80] *Relativistic Heavy Ion Physics*, four lectures presented at the National Nuclear Physics Summer School, Michigan State University, July, 2009, <http://meetings.nsl.msu.edu/NNPSS09/>.
- [81] *Early Days at RHIC - the PHENIX Perspective*, presented at Riding the Crest of QCD , John Harris 60th Birthday Symposium, Yale University, March 12, 2010.
- [82] *The Fluid Nature of Quark-Gluon Plasma*, Ohio State University Physics Department Colloquium, April 20, 2010.
- [83] *The Fluid Nature of Quark-Gluon Plasma*, University of Notre Dame Physics Department Colloquium, April 21, 2010.
- [84] *QCD and The Structure of Matter with the RHIC Luminosity Upgrade*, IUPAP Symposium at TRIUMF, British Columbia, Canada, July, 2010.
- [85] *Melting Rutherford’s Nucleus (to make Quark-Gluon Plasma)*, Rutherford Centennial Conference, Manchester, U.K., August 2011.
- [86] *The Fluid Nature of Quark-Gluon Plasma*, University of California, Berkeley Physics Department Colloquium, October 10, 2011.
- [87] *New Results from RHIC*, Aspen Winter Workshop on the Hunt for New Particles, February, 2012.
- [88] *The Fluid Nature of Quark-Gluon Plasma*, University of New Mexico Physics Department Colloquium, April 13, 2012.
- [89] *The Quest for the Quark-Gluon Plasma*, keynote talk at Quark Matter 2012 student symposium, August 12, 2012.
- [90] *Relativistic Heavy Ion Overview*, Nuclear Science Advisory Committee meeting, September 7, 2012.
- [91] *The RHIC and LHC Discoveries in Perspective*, Hot Topics in Hot Matter Symposium at the Weizmann Institute of Science, October 17, 2012.
- [92] *The Birth of Relativistic Heavy Ion Physics*, Bill Willis Memorial Symposium, Brookhaven National Laboratory April 26, 2013.
- [93] *A Brief History of PHENIX*, Jacob Zimanyi Winter School of Physics, Budapest, Hungary, December 5, 2013.

- [94] *The Tyranny of Asymptotic Freedom*, University of Michigan Physics Department Colloquium, February 18, 2014.
- [95] *PHENIX, Serendipity and Interferometry*, Tom W. Bonner Prize talk, American Physical Society meeting, April 7, 2014.
- [96] *PHENIX: The Early Days*, Symposium for Shoji Nagamiya, Progress in Nuclear and Hadron Physics and Accelerator Related Sciences, Tsukuba, Japan, July 16, 2014.
- [97] *RHIC and LHC Overview: Where are we? Where are we going?*, QCD Town Meeting for the Nuclear Physics Long Range Plan, Temple University; September 12, 2014.
- [98] *The Charm and Beauty of (s)PHENIX*, Workshop on Heavy Flavor Production in High-energy Collisions and *Symposium in Honor of Miklos Gyulassy and Howard Wieman*, <http://heavyflavor2015.lbl.gov/first-announcement>, Lawrence Berkeley National Laboratory; January 8, 2015. <https://docs.google.com/a/lbl.gov/viewer?a=v&pid=sites&srcid=bGJsLmdvdnxoZWZFeS1mbGF2b3Ittd29ya3Nob3AtYXQtbGJubC0yMDE1fGd40jQyMDdiNTE4ZDUzM2JmY2M>.
- [99] *Relativistic Nuclear Collisions, Perfect Fluids, and the Gauge/Gravity Duality*, Columbia University Physics Department Colloquium, March 23, 2015.
- [100] *10 Years of Perfect Liquid*, RHIC Users Meeting, June 11, 2015. [https://www.bnl.gov/aum2015/content/plenary/pdf/zajc\\_perfect\\_liquid10for.pdf](https://www.bnl.gov/aum2015/content/plenary/pdf/zajc_perfect_liquid10for.pdf).
- [101] *Miklos Gyulassy - A Man in Full*, Looking Beyond  $10^{10}$  Mini-Bangs, CGC's, Perfect Fluids and Jet Tomo/Holography, Wuhan, China, September 25, 2015. <http://gyulassyfest.lbl.gov/files-download/Zajc2.pdf?attredirects=0&d=1>.
- [102] *25 Years of PHENIX*, RHIC Users Meeting, Brookhaven, NY, June 8, 2016. [https://www.bnl.gov/aum2016/content/plenary/pdf/Zajc\\_phenix\\_25.pdf](https://www.bnl.gov/aum2016/content/plenary/pdf/Zajc_phenix_25.pdf).
- [103] *Correlating with U<sub>1</sub>*, CERN Symposium for Ulrich Heinz, July 18, 2016. <https://indico.cern.ch/event/493854/contributions/2196214/attachments/1310581/1960934/ZajcHeinzFest.pdf>.
- [104] *The RHIC Discoveries in Perspective*, CERN Symposium for 30 Years of Heavy Ion Physics, Meyrin, Switzerland, November 8, 2016. <https://indico.cern.ch/event/457044/contributions/1969054/attachments/1368645/2074601/ZajcCERN30forPDF.pdf>.
- [105] *The Way Forward*, closing talk at Quark Matter 2017, Chicago, IL, February 11, 2017. <https://indico.cern.ch/event/433345/contributions/2321629/attachments/1411355/2158856/ZajcQM17.pdf>.
- [106] *Experimental Relativistic Heavy Ion Physics*, three lectures presented at the National Nuclear Physics Summer School, University of Colorado, July, 2017, <https://sites.google.com/site/nnps2017/>.
- [107] *Exile And Creativity: Enrico Fermi*, panel discussion at the Italian Cultural Institute, New York, February 20, 2018. <http://primolevicenter.org/events/exile-and-creativity-enrico-fermi/>.
- [108] *The Modern View of Quark-Gluon Plasma*, closing student lecture at Quark Matter 2018, Venice, Italy, May 13, 2018. <https://indico.cern.ch/event/656452/contributions/2953781/attachments/1648287/2635149/ZajcQM18.pdf>.
- [109] *PHENIX Facts, Figures and Firsts*, Berkeley Jet Physics Jubilee, Lawrence Berkeley National Laboratory, July 2, 2018. <https://conferences.lbl.gov/event/138/session/2/contribution/3/material/slides/0.pptx>.
- [110] *PHENIX and Heavy Ions*, Sippach Fest, Nevis Laboratories, Irvington, NY, November 9, 2018. <https://www.nevis.columbia.edu/events/slides/06%20ZajcSippachFest.pdf>.
- [111] *Fulfilling Miklos's Dream: Quark-Gluon Plasma Everywhere*, invited talk at the workshop on The Past, Present and Future of Relativistic Heavy Ion Collisions, Knoxville, TN, March 18, 2019. <https://indico.cern.ch/event/779744/contributions/3358450/>.
- [112] *A Tribute to Roy Glauber*, 2019 RHIC and AGS Users' Meeting, Brookhaven National Laboratory, June 6, 2019. [https://www.bnl.gov/aum2019/content/plenary/pdf/bill\\_zajc.pdf](https://www.bnl.gov/aum2019/content/plenary/pdf/bill_zajc.pdf).
- [113] *IP-JAZMA Critical Assessment of Physics Attributions*, Initial Stages 2019, Columbia University, June 26, 2019. <https://indico.bnl.gov/event/5391/sessions/2989/#20190626>.
- [114] *A Tribute to Roy Glauber*, Initial Stages 2019, Columbia University, June 27, 2019. <https://indico.bnl.gov/event/5391/contributions/29208/>.
- [115] *Pursuing the Perfect Primordial Fluid*, Rutgers University Physics Department Colloquium, December 11, 2019. <http://www.physics.rutgers.edu/np/seminars.html>.
- [116] *Discovering the World's Most Perfect Fluid*, Science on Hudson public outreach talk, Nevis Laboratories, Irvington, NY, February 13, 2020. <https://www.nevis.columbia.edu/events/science-on-hudson.html>.