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12 Most Significant Papers

- 1) 1985 H. Kruse, B.V. Jacak, H. Stoecker. Microscopic theory of pion production and sideways flow in heavy ion collisions. *Phys.Rev.Lett.*54:289-292. 114 citations. (The first paper in the VUU/BUU/RQMD set of models providing a Monte Carlo simulation of the hadron gas phase of heavy ion collisions.)
- 2) 1987 K.G.R. Doss, H.-A. Gustafsson, H. Gutbrod, J.W. Harris, B.V. Jacak, K.-H. Kampert, B. Kolb, A.M. Poskanzer, H.-G. Riter, H.R. Schmidt, L. Teitelbaum, M. Tincknell, S. Weiss, and H. Weiman. Fragment flow in nuclear collisions. *Phys.Rev.Lett.*59:2720. (First paper showing that composite nuclei emitted in heavy ion collisions flow collectively.)
- 3) 1995 T. Akesson et al. (The HELIOS Collaboration). Low mass lepton-pair production in p-Be collisions at 450-GeV/c. *Z.Physik C*68:47-64. (This paper provides the solution of the long-standing “anomalous lepton pair” mystery; the low mass lepton pairs in pp were found to arise from eta Dalitz decays by experimental reconstruction of the 3 particle final state.)
- 4) 1997 I. Bearden et al. (NA44 Collaboration). Collective expansion in high-energy heavy ion collisions. *Phys.Rev.Lett.*78:2080-2083. (This was the first paper showing that Bose-Einstein correlations of pions emitted from high energy heavy ion collisions yield a decreasing source size as the pion pair pT is increased. This is due to the position-momentum correlations induced by expansion of the source.)
- 5) 1999 U. Heinz and B. Jacak. Two-particle correlations in relativistic heavy ion collisions. *Ann.Rev.Nucl.Part.Sci.*49:529-579. 128 citations. (This is a review article on two particle Bose-Einstein Correlations.)
- 6) 2002 K. Adcox et al. (PHENIX Collaboration). Suppression of hadrons with large transverse momentum in central Au+Au collisions at $\sqrt{s_{NN}} = 130$ GeV. *Phys.Rev.Lett.*88:022301. 503 citations. (Discovery of jet quenching. The Stony Brook group analyzed the charged particles.)
- 7) 2003 S.S. Adler et al. (PHENIX Collaboration). Absence of suppression in particle production at large transverse momentum in $\sqrt{s_{NN}} = 200$ GeV d+Au collisions. *Phys.Rev.Lett.*91:072303. 315 citations. (Experimental confirmation that jet quenching requires high density matter. Charged particle analysis done by Jacak team; Dr. Jacak was primary author of the paper.)

- 8) 2005 S.S. Adler et al. (PHENIX Collaboration). Jet structure of baryon excess in Au+Au collisions at $\sqrt{s_{NN}} = 200$ GeV. Phys.Rev.C71:051902(R). 67 citations. (Discovery that the excess baryons in central Au+Au collisions arise from jets. Collaboration of work between Dr. Jacak and her graduate student.)
- 9) 2005 K. Adcox et al. (PHENIX Collaboration). Formation of dense partonic matter in relativistic nucleus-nucleus collisions at RHIC: Experimental evaluation by the PHENIX collaboration. Status of our program to create, detect and characterize quark-gluon plasma. Nucl.Phys.A757:184-283. 695 citations. (Summary of insights from first three years of PHENIX data. Dr. Jacak was one of the primary authors.)
- 10) 2006 S.S. Adler et al. (PHENIX Collaboration). Modifications to di-jet hadron pair correlations in Au+Au collisions at $\sqrt{s_{NN}} = 200$ GeV. Phys.Rev.Lett.97:052301. 215 citations. (First observation of strong modification of jets arising from partons propagating through the quark gluon plasma.)
- 11) 2007 (PHENIX Collaboration). System Size and Energy Dependence of Jet-Induced Hadron Pair Correlation Shapes in Relativistic Nuclear Collisions. Phys. Rev. Lett.98:232302. 36 citations. (Evidence that medium modification and response to jets is independent of system size and beam energy. Major fraction of the work was done by team working with Dr. Jacak.)
- 12) 2008 (PHENIX Collaboration). Dihadron azimuthal correlations in Au+Au collisions at $\sqrt{s_{NN}}=200$ GeV. Phys.Rev.C78:014901. 65 citations to date. (Systematics of medium modification of jets, as a function of trigger and associated particle p_T .)