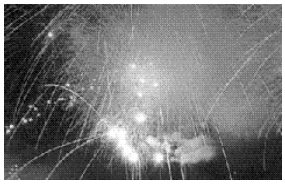

NEW STATES OF MATTER IN HADRONIC INTERACTIONS

PAN AMERICAN ADVANCED STUDY INSTITUTE

SCIENTIFIC PROGRAM

Monday Jan. 07

16:30 Self-Introduction
19:00 Reception Cocktail and Dinner

Tuesday Jan. 08

Session 1 – Chairperson Karel Safarik
8:30 – 09:20 W. Busza – *Introduction to Relativistic Heavy Ion Collisions I*
9:20 – 10:10 G.Altarelli – *Introduction to Quantum Chromodynamics I*

Session 2 – Chairperson Klaus Werner
10:40 – 12:30 T.Kodama – *Introduction to Relativistic Ideal Gases*

Session 3 – Chairperson Johann Rafelski
14:00 – 15:30 Discussion on morning lectures

Session 4 – Chairperson Thomas Trainor
15:30 – 17:00 W. Busza – *Introduction to Relativistic Heavy Ion Collisions II*

Session 5 – Chairperson Erasmo Ferreira
17:30 – 19:00 D. Kharzeev – *Hadron-Hadron and Hadron-Nucleus Interactions*

Wednesday Jan. 09

Session 1 – Chairperson Federico Antinori
8:30 – 09:20 J. Harris – *RHIC Physics – Overview I*
9:20 – 10:10 G.Altarelli – *Introduction to Quantum Chromodynamics II*

Session 2 – Chairperson Gastão Krein
10:40 – 11:30 F. Karsch – *Introduction to Finite Temperature QCD on the Lattice I*
11:30 – 12:30 A. DiGiacomo - *Vacuum Properties of QCD I*

Session 3 – Chairperson Robert Thews
14:00 – 15:30 Discussion on lectures

Session 4 – Chairperson Norberto Scoccola
15:30 – 16:20 J. Aichelin – *Introduction to Hot Hadronic Matter I*
16:20 – 17:00 T. Trainor – *Purpose and Physics of Event by Event Analysis*

Session 5 – Chairperson Robert Thews
17:30 – 19:00 Berndt Müller – *Quark and Gluon Matter*

Thursday Jan. 10

Session 1 – Chairperson Federico Antinori
8:30 – 09:20 J. Harris – *RHIC Physics – Overview II*
9:20 – 10:10 G.Altarelli – *Introduction to Quantum Chromodynamics III*

Session 2 – Chairperson Gastão Krein
10:40 – 11:30 F. Karsch – *Introduction to Finite Temperature QCD on the Lattice II*
11:30 – 12:30 A. DiGiacomo - *Vacuum Properties of QCD II*

Session 3 – Chairperson Takeshi Kodama
14:00 – 15:30 Discussion on lectures

Session 4 – Chairperson Takeshi Kodama
15:30 – 16:20 J. Aichelin – *Introduction to Hot Hadronic Matter II*
16:20 – 17:00 H. Stöcker – *A Tour of QGP Signals I*

Session 5 – Chairperson Erasmo Ferreira
17:30 – 19:00 Mini Symposium on Strong Interaction Physics in Latin America

Friday Jan. 12

Session 1 – Chairperson Karel Safarik
8:30 – 09:20 J. Harris – *RHIC Physics – Overview III*
9:20 – 10:10 G.Altarelli – *QCD Structure Functions I*

Session 2 – Chairperson Karel Safarik
10:40 – 11:30 F. Karsch – *Introduction to Finite Temperature QCD on the Lattice III*
11:30 – 12:30 F. Antinori – *SPS Physics: Overview I*

Session 3 – Chairperson Berndt Müller
14:00 – 15:30 Discussion on lectures

Session 4 – Chairperson Berndt Müller
15:30 – 16:20 H. Stöcker – *A Tour of QGP Signals II*
16:20 – 17:00 Ch. Roland – *Survey of Recent PHOBOS Results*

Session 5 – Chairperson Gastão Krein
17:30 – 18:10 L. Masperi – *Strangelets in the Universe*
18:10 – 18:35 D. Menezes – *Caloric Curve for Finite Nuclei in Relativistic Models*
18:35 – 19:00 M. Malheiro – *Quark Matter in Chromodielectric Model*

After Dinner Session
21:00 – 22:00 *Guitar Recital and Lecture on Brazilian Mucic of 20th century - Nicolas Souza Barros*

Saturday Jan. 12

Session 1 – Chairperson Wit Busza
8:30 – 09:20 Berndt Müller (coordinator) – *Vacuum*
9:20 – 10:10 F. Antinori – *SPS Physics: Overview II*

Session 2 – Chairperson Wit Busza
10:40 – 11:30 H. Stöcker – *Higher Dimensions* and *Black Hole Formation in Heavy Ion Collisions*
11:30 – 12:30 H. Stöcker (coordinator) – *QGP Observables*

Session 3 – Chairperson Klaus Werner
14:00 – 15:30 Discussion on lectures

Session 4 – Chairperson Klaus Werner
15:30 – 16:20 G. Altarelli – *QCD Structure Functions II*
16:20 – 17:00 W. Zajc – *HBT Interferometry in Heavy Ion Collisions I*

Session 5 – Chairperson Gastão Krein
17:30 – 18:35 W. Zajc – *HBT Interferometry in Heavy Ion Collisions II*
18:35 – 19:00 N. Scoccola – *Finite Temperature Chiral Models*

Sunday Jan. 13 Excursion

Monday Jan. 14

Session 1 – Chairperson Erasmo Ferreira
8:30 – 09:20 G.Altarelli – *QCD Structure Functions II*
9:20 – 10:10 W. Zajc – *Charming Highlight from PHENIX*

Session 2 – Chairperson Yogiro Hama
10:40 – 12:30 L. Csernai – *Relativistic Hydrodynamics I*

Session 3 – Chairperson Dmitri Kharzeev
14:00 – 15:30 Discussion on lectures

Session 4 – Chairperson Berndt Müller
15:30 – 17:00 J. Rafelski - *Hadrochemistry*

Session 5 – Chairperson Gastão Krein
17:30 – 18:10 A. Ayala – *Hyperon Polarizations*
18:10 – 18:35 P. Sorensen – *Azimuthal Anisotropy of K^o_s and Λ at id-rapidity from Au + Au collisions at $\sqrt{s}$=130 GeV*

After Dinner Session
20:00 - Dance Music – *Banda VEREDAS*

Tuesday Jan. 15

Session 1 – Chairperson Takeshi Kodama
8:30 – 09:20 K. Safarik – *Particle Tracking I*
9:20 – 10:10 H-Th. Elze – *Relativistic Quantum Transport Theory I*

Session 2 – Chairperson Takeshi Kodama
10:40 – 11:30 U. Van Kolk – *Introduction to Effective Field Theories in QCD I*
11:30 – 12:30 L. Csernai – *Relativistic Hydrodynamics II*

Session 3 – Chairperson Berndt Müller
14:00 – 15:30 Discussion on lectures

Session 4 – Chairperson Berndt Müller
15:30 – 16:20 J. Rafelski – *Quark Gluon Plasma and Strangeness I*
16:20 – 17:00 M. Nielsen – *QCD Sum Rules*

Session 5 – Chairperson Johann Rafelski
17:30 – 18:10 J. Castillo – *Multistrange Hadrons in STAR*
18:10 – 18:35 P. Fachini – *K* (892) Production in Relativistic Heavy Ion Collisions at* $\sqrt{s}$*=130 GeV*
18:35 – 19:00 C. Markert - Λ*(1520) at SPS and RHIC*

Wednesday Jan. 16

Session 1 – Chairperson Cesar Vasconcellos
8:30 – 09:20 K. Safarik – *Particle Tracking II*
9:20 – 10:10 H-Th. Elze – *Relativistic Quantum Transport Theory II*

Session 2 – Chairperson Cesar Vasconcellos
10:40 – 11:30 U. Van Kolk – *Introduction to Effective Field Theories in QCD II*
11:30 – 12:30 W. Zajc – *HBT*

Session 3 – Chairperson Laszlo Csernai
14:00 – 15:30 Discussion on lectures

Session 4 – Chairperson Laszlo Csernai
15:30 – 16:20 J. Rafelski – *Quark Gluon Plasma and Strangeness II*
16:20 – 16:40 C. J. Solano – *Polarization studies of* Ξ
16:40 – 17:00 C. Mariotto - *Perturbative and Non-perturbative QCD Dynamics in hadroproduction of charmonium*

Session 5 – Chairperson Gastão Krein
17:30 – 18:10 F. Grassi – *Continuous Hadron Emission*
18:10 – 18:35 T. Osada – *Event by Event Hydrodynamics*
18:35 – 19:00 M. G. Ducati – *Unitarity Corrections to Structure Functions*

Thursday Jan. 17

Session 1 – Chairperson Frederique Grassi

8:30 – 09:20 B. Müller – *Thermal QCD I*

9:20 – 10:10 K. Werner – *Physics of Event Generators I*

Session 1 – Chairperson Frederique Grassi

10:40 – 11:30 D. Kharzeev – *Classical QCD and Heavy Ion Collisions*

11:30 – 12:30 R. Thews – *Nonlinear Behavior of Quarkonium Formation and Deconfinement Signals I*

Session 3 – Chairperson H-Thomas Elze

14:00 – 15:30 Discussion on lectures

Session 4 – Chairperson Laszlo Csernai

15:30 – 16:00 J. Raufeisen – *Nuclear Effects in the Drell-Yan process.*

16:00 – 16:20 F-M. Liu - *New Ideas of Baryon Production in Proton-Proton Scattering*

16:20 – 16:40 C. Vasconcellos – *Quark Stars*

16:40 – 17:00 L. Abu Raddad - *The Nucleon and the Nucleon Force in the Context of Effectivetheory and Path Integral Methods*

Session 5 – Chairperson H-Thomas Elze

17:50 – 19:30 Colloquim C. Tsallis – *Non-Extensive Statistics and Its Applications*

Friday Jan. 17

Session 1 – Chairperson William Zajc

8:30 – 09:20 B. Müller – *Thermal QCD II*

9:20 – 10:10 K. Werner – *Physics of Event Generators II*

Session 1 – Chairperson William Zajc

10:40 – 11:30 D. Kharzeev –*Heavy Quarks in QCD*

11:30 – 12:30 R. Thews – *Nonlinear Behavior of Quarkonium Formation and Deconfinement Signals II*

12:30 Closing

14:30 Departure

TIME TABLE

FIRST WEEK (Jan. 07 – Jan. 12)

	Mon. / 07	Tue. / 08	Wed. / 09	Thu. / 10	Fri. / 11	Sat. / 12
08:30		W. Busza	J. Harris	J. Harris	J. Harris	*Vacuum*
09:20		G.Altarelli	G.Altarelli	G.Altarelli	G.Altarelli	F.Antinori
10:10	Break					
10:40		T.Kodama	F.Karsch	F.Karsch	F.Karsch	H.Stöcker
11:30		´´	A.DiGiacomo	A.DiGiacomo	F.Antinori	*QGP-Obs.*
12:30	Lunch					
14:00	Check In	Discussion Session				
15:30	Self –	W.Busza	J.Aichelin	J.Aichelin	H.Stöcker	G.Altarelli
16:20	Introduction	´´	T.Trainor	H. Stöcker	Ch.Roland	W.Zajc
17:00	Break					
17:30	Self -	D.Kharzeev	B.Müller	Mini-Symposium	L.Masperi	W.Zajc
18:10	Introduction	´´	´´	*Hadrons in L.A.*	D.Menezes	´´
18:35		´´	´´	Chair: E.Ferreira	M.Malheiro	N.Scoccola
19:00	Reception					
20:00	Dinner	Dinner				

SECOND WEEK (Jan. 13 – Jan. 18)

	Sun. / 13	Mon. / 14	Tue. / 15	Wed. / 16	Thu. / 17	Fri. / 18
08:30		G.Altarelli	K.Safarik	K.Safarik	B.Müller	B.Müller
09:20		W.Zajc	H-Th. Elze	H-Th. Elze	K.Werner	K.Werner
10:10		Break				
10:40	**Excursion**	L.Csernai	U.VanKolk	U.VanKolk	D.Kharzeev	D.Kharzeev
11:30			L.Csernai	*HBT*	R.Thews	R.Thews
12:30		Lunch				Closing /
14:00		Discussion Session				Lunch
15:30		J.Rafelski	J.Rafelski	J.Rafelski	J. Raufeisen F. Liu	Departure (14:30)
16:20			M.Nielsen	C.Solano	C. Vasconcellos	
16:40				C.Mariotto	L. Abu Raddat	
17:00		Break				
17:30		A. Ayala	J.Castillo	F.Grassi	Colloquium	
18:10		P.Sorensen	P. Fachini	T.Osada	C.Tsallis	
18:45			C.Markert	M.G.Ducati		
20:00	Dinner				BBQ Dinner	