



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 Music 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 Yojiro 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_s^0 and Λ at mid-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 - *$\Lambda(1520)$ 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	<i>Vacuum</i>
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	<i>QGP-Obs.</i>
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	''	''	<i>Hadrons in L.A.</i>	D. Menezes	''
18:35		''	''	Chair: E. Ferreira	M. Malheiro	N. Scoccola
19:00	Reception	Dinner				
20:00	Dinner					

SECOND WEEK (Jan. 13 – Jan. 18)

	Sun. / 13	Mon. / 14	Tue. / 15	Wed. / 16	Thu. / 17	Fri. / 18	
08:30	Excursion	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		L.Csernai	U.VanKolk	U.VanKolk	D.Kharzeev	D.Kharzeev	
11:30			L.Csernai	HBT	R.Thews	R.Thews	
12:30		Lunch					Closing / Lunch
14:00		Discussion Session					
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 C.Tsallis		
18:10		P.Sorensen	P. Fachini	T.Osada			
18:45			C.Markert	M.G.Ducati			
20:00		Dinner				BBQ Dinner	