Workshop on Physics and Experiments with Linear Colliders
September 8-12, 1995, Morioka-Appi, Iwate, Japan

THIRD BULLETIN

Sept. 7, 1995

General Information

This is the third and the final bulletin for the Workshop on Physics and Experiments with Linear Colliders, which will be held at Appi highlands near Morioka, Iwate, from September 8 to 12, 1995. This is the third in a series of international workshops and will concentrate on physics and detector issues relevant to future high energy linear colliders. The workshop is organized under the auspices of ICFA by KEK and is sponsored, in part, by the prefectural government of Iwate and Foundation for High Energy Accelerator Science.

International Advisory Committee

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R. Van Kooten	Indiana	rickv@ind.physics.indiana.edu
P. Zerwas	DESY	zerwas@desy.de

Program

Thursday, September 7, 1995

Evening – Registration and Welcome Drinks

17:00 - 20:30	Registration	
18:00 -	Welcome Drinks	

Friday, September 8, 1995

Morning – Opening Session (at Appi Plaza)

7:30 -	Registration	
——	Chaired by P. Zerwas ——	
8:30 - 8:40	Opening Address	
8:40 - 9:40	Physics Prospects	H. Murayama (LBL)
	break	
10:10 - 11:10	Accelerator Overview	G. Loew (SLAC, Chairman of Technical Review Committee)
	LUNCH	

Afternoon – Parallel Sessions (rooms) and Conveners

13:00 - 15:00	**Higgs** (at Plaza) P. Janot (CERN), K. Kawagoe(Kobe)	**Top/QCD** (at Ryugamori) R. Miquel (CERN), Y. Sumino (Tohoku), M. Jezabek (INP Cracow), P. Burrows (MIT)
	break	
15:30 - 16:30	**Higgs** (continued)	**Top/QCD** (continued)

Evening – Reception

17:00	Shuttle buses leave APPI	
18:30 - 20:00	Reception at Morioka Grand Hotel	

Saturday, September 9, 1995

Morning – Parallel Sessions (rooms) and Conveners

8:30 - 10:00	**Strongly Interacting Higgs Sectors** (at Plaza) C.P. Yuan (Michigan), M. Tanabashi (KEK)	
	break	
10:30 - 12:00	**SUSY** (at Plaza) X. Tata (Hawaii), M. Nojiri (KEK)	**Extended Gauge Sectors** (at Ryugamori) C. Verzegnassi (Lecce/INFN)
	LUNCH	

Afternoon – Parallel Sessions (rooms) and Conveners

13:30 - 15:30	**SUSY** (continued)	**W/Z** (at Ryugamori) K. Hikasa (Tohoku), K. Riles (Michigan)
	break	
16:00 - 18:30	**Experimentation** (at Plaza) R. Settles (MPI), R. Jacobsen (LBL), S.-K. Kim(Seoul)	**Other Options** (at Ryugamori) V. Telnov (BINP), G. Jikia (Protvino)

Sunday, September 10, 1995

Excursions

Monday, September 11, 1995

Morning – Plenary Sessions (at Appi Plaza)

	—— Chaired by K. Oide ——	
8:30 - 9:05	CLIC Test Facility	J.P. Delahaye (CERN)
9:05 - 9:40	JLC Accelerator Test Facility	H. Hayano (KEK)
9:40 - 10:15	NLCTA Status	C. Adolphsen (SLAC)
	break	
	—— Chaired by R. Settles ——	
10:45 - 11:20	TESLA/S-band Test Facility	M. Leenen (DESY)
11:20 - 11:55	VLEPP Test Facility	V. Balakin (BINP)
	LUNCH	

Afternoon – Plenary Sessions (at Appi Plaza)

	—— Chaired by P. Janot ——	
13:30 - 14:05	Higgs (Theory)	Y. Okada (KEK)
14:05 - 14:40	Higgs (Experiment)	R. Van Kooten (Indiana)
14:40 - 15:15	Strongly Interacting Higgs Sectors	T. Barklow (SLAC)
	break	
	—— Chaired by R. Miquel ——	
15:45 - 16:20	Top (Theory)	L. Orr (Rochester)
16:20 - 16:55	Top (Experiment)	R. Frey (Oregon)
16:55 - 17:30	QCD	P. Burrows (MIT)

Evening – Banquet

18:30 - 20:30	Banquet at Hotel APPI Grand

Tuesday, September 12, 1995

Morning – Plenary Sessions (at Appi Plaza)

	—— Chaired by K. Hikasa ——	
8:00 - 8:45	W/Z	F. Boudjema (ENSLAPP)
8:40 - 9:20	Extended Gauge Sectors	A. Djouadi (Montreal)
	break	
	—— Chaired by G. Jikia ——	
9:50 - 10:25	SUSY (Theory)	M. Peskin (SLAC)
10:25 - 11:00	SUSY (Experiment)	K. Fujii (KEK)
11:00 - 11:35	Other Options	D. Miller (UC London)
	LUNCH	

Afternoon – Plenary Sessions (at Appi Plaza)

	—— Chaired by S. Pakvasa ——	
13:00 - 13:45	Experimentation	T. Tauchi (KEK)
13:45 - 14:35	Concluding Remarks	D. Burke (SLAC)

16:30 **Shuttle buses leave for Morioka station.**

Parallel Session Programs

Higgs (Sep.8, 13:00-16:30 at Appi Plaza)

13:00-13:25 E. Boos (Moscow)
SM Higgs search in the reactions with four fermions at NLC energies
13:25-13:45 J. Kamoshita (KEK)
Determination of the parameters in the MSSM Higgs sector
from detailed study of the Higgs properties
13:45-14:10 I. Nakamura (Kobe)
Measurement of Br(H→cc+gg)/Br(H→bb) at $\sqrt{s} = 300 GeV$
14:10-15:00 A. Djuadi (Montreal)
Summary of the European Higgs Group

15:00-15:30 **Break**

15:30-15:55 I. Watanabe (Ochanomizu)
Studying the Higgs potential via $e^+e^- \to Zhh$
15:55-16:20 W.S. Hou (Taiwan)
Like Sign Top Pair Production via $e^+e^- \longrightarrow h^0A^0 \longrightarrow tt\overline{cc}$

TOP/QCD (Sep.8, 13:00-16:30 at room Ryugamori)

13:00-13:25 M. Jezabeck (INP Cracow)
Polarized Top Quarks
13:25-13:50 F. Cuypers (MPI)
Measuring E-W Dipole Moments of the Top Quark
13:50-14:15 R. Frey (Oregon)
Probing Anomalous Top Quark Coupling
14:15-15:00 M. Martinez (Barcelona)
Results of the Europian Working Group

15:00-15:30 **Break**

15:30-15:55 T. Asaka (Tohoku)
Probing Dynamical Symmetry Breaking Physics using Top Quark
15:55-16:20 H.J. Schreiber (DESY)
Top Quark Production in the reaction $e^+e^-(e^-e^-) \to t, b, \nu, e$ at NLC

Strongly Interacting Higgs Sectors (Sep.9, 8:30-10:00 at Appi Plaza)

8:30-8:55 D. Dominici (LGO E. Fermi)
BESS and Degenerate BESS at Future Linear Colliders
8:55-9:15 M. Tanabashi (KEK)
WW resonance and chiral Lagrangian
9:15-9:35 S. Kanemura (Osaka)
Screening Theorem for the Higgs Decay into Gauge Boson Pairs
9:35-10:00 C.-P. Yuan (MSU)
Probing Electroweak Symmetry Breaking Mechanism at Future Colliders

Extended Gauge Sectors (Sep.9, 10:30-12:00 at room Ryugamori)

10:30-11:00	M. Drees (Wisconsin) Tests of a class of SUSY E6 models at NLC
11:00-11:30	P. Minkowski (Bern) Prerequired neutrino properties for observable lepton flavor violation effects at NLC
11:30-12:00	C. Verzegnassi (Lecce) Model independent Z' mass reach at NLC

SUSY (Sep.9, 10:30-15:30 at Appi Plaza)

10:30-10:55	S. Komamiya (ICEPP) Status of SUSY searches at LEP 1.5 and LEP 2
10:55-11:15	A. Mashiero (Perugia) Heavy SUSY fermions contributions to Trilinear Gauge Boson Couplings
11:15-11:35	M.M. Nojiri (KEK) Precision Study of MSSM by Production and Decay of $\tilde{\tau}$
11:35-11:55	K. Hikasa (Tohoku) Violation of Supersymmetric Coupling Relation in Squark Decay
12:00-13:30	**Lunch**
13:30-13:45	S. Matsumoto (KEK) Constraints on MSSM from Precision Measurements
13:45-14:05	F. Cuypers (MPI) Supersymmetric Searches in the e^-e^-, $e^-\gamma$ and $\gamma\gamma$ Modes
14:05-14:25	K. Hidaka (Tokyo Gakugei) Large $\tilde{q}$-mixing Impact on H^+ Decay in the MSSM
14:25-14:40	B.-R. Kim (RWTH Aachen) Nonlinear Supersymmetric Standard Model
14:40-15:00	A. Sopczac (DESY) Supersymmetric Scalar-Top Discovery Potential at a 500 GeV e^+e^- Linear Collider
15:00-15:25	T. Kon (Seikei) SUSY Processes Calculated Using GRACE

W/Z (Sep.9, 13:30-15:30 at room Ryugamori)

13:30-14:00	T. Rieman (DESY-Zeuthen) Semi-analytical approach to off-shell W and Z production
14:00-14:30	R. Szalapski (KEK) Effects from new physics in $e^+e^- \to W^+W^-$
14:30-15:00	F. Cuypers (MPI Munchen) Anomalous gauge coupling in e^+e^- scattering
15:00-15:30	A. Miyamoto (KEK) Monte Carlo study of $e^+e^- \to W^+W^-Z$

Experimentation (Sep.9, 16:00-18:30 at Appi Plaza)

16:00-16:20	R. Settles (MPI) Experimentation Issues
16:20-16:40	T. Hirose (Tokyo Metropolitan) Development of polarized positron beams for JLC
16:40-17:00	C. Adolphsen (SLAC) Ground motion measurements at SLAC
17:00-17:15	C. Damerell (RAL) Design of a CCD-based vertex detector for the future linear collider
17:15-17:30	D. Jackson (SLAC) Topological vertex reconstruction
17:30-17:50	N. Khalatyan (KEK) R&D status of JLC CDC
17:50-18:10	K. Ishii (Kobe) R&D status of JLC calorimeter
18:10-18:30	R. Orava (SEFT) Project Management in a Longterm and Global One-of-a-kind project

Other Options (Sep.9, 16:00-18:30 at room Ryugamori)

16:00-16:25	V. Telnov (Nobosibirsk) Parameters of Photon Colliders
16:25-16:45	T. Takahashi (Hiroshima) Study of $\gamma\gamma \to WW$ in a Photon Collider
16:45-17:05	G. Jikia (Protvino) Radiative Corrections to $\gamma\gamma \to WW$
17:05-17:25	I. Watanabe (Ochanomizu) Probing beyond the Standard Model through Two-photon Decay Width of Higgs
17:25-17:45	S.-Y. Choi (KEK) CP violation at Linear Photon Colliders with Polarized Beams
17:45-18:10	F. Cuypers (MPI) The Physics Potential of e^-e^- collisions

List of Conveners

Session	Conveners	E-mail addresses
Higgs	K. Kawagoe (Kobe)	kawagoe@phys.kobe-u.ac.jp
	P. Janot (CERN)	janot@frcpn11.in2p3.fr
Top/QCD	R. Miquel (CERN)	miquel@alws.cern.ch
	Y. Sumino (Tohoku)	sumino@tuhep.phys.tohoku.ac.jp
	P. Burrows (MIT)	burrows@slac.stanford.edu
	M. Jezabek (INP Cracow)	jezabek@chopin.ifj.edu.pl
Strong Higgs	M. Tanabashi (KEK)	tanabash@theory.kek.jp
	C.-P. Yuan (Michigan)	yuan@umiphys.bitnet
SUSY	M. Nojiri (KEK)	nojirin@kekvax.kek.jp
	X. Tata (Hawaii)	tata@uhhepg.bitnet
Extended Gauge	C. Verzegnassi (Lecce/INFN)	claudio@trieste.infn.it
W/Z	K. Hikasa (Tohoku)	hikasa@tuhep.phys.tohoku.ac.jp
	K. Riles (Michigan)	keithr@cernvm.bitnet
Experimentation	R. Jacobsen (LBL)	Bob_Jacobsen@slac.stanford.edu
	S.-K. Kim (Seoul)	skkim@hep1.snu.ac.kr
	R. Settles (MPI)	sts@cernvm.bitnet
Other Options	V. Telnov (BINP)	telnov@inp.nsk.su
	G. Jikia (Protvino)	jikia@mx.ihep.su

List of Plenary Speakers

Session	Speakers	E-mail addresses
Physics Prospects	H. Murayama (LBL)	murayama@ux5.lbl.gov
Accelerator Overview	G. Loew (SLAC)	galoew@slac.stanford.edu
CLIC Test Facility	J. P. Delahaye (CERN)	jpd@cernvm.bitnet
JLC ATF	H. Hayano (KEK)	hayanoh@kekvax.kek.jp
NLC Test Accelerator	C. Adolphsen (SLAC)	star@slac.stanford.edu
TESLA/SBLC Test Facility	M. Leenen (DESY)	f35hml@dsyibm.desy.de
VLEPP Test Facility	V. Balakin (BINP)	balakin@vlepp.serpukhov.su
Higgs	Y. Okada (KEK)	okaday@kekvax.kek.jp
	R. Van Kooten (Indiana)	rickv@ind.physics.indiana.edu
Strong Higgs	T. Barklow (SLAC)	timb@slac.stanford.edu
Top	L. Orr (Rochester)	orr@urhep.pas.rochester.edu
	R. Frey (Oregon)	rayfrey@slac.stanford.edu
QCD	P. Burrows (MIT)	burrows@slac.stanford.edu
W/Z	F. Boudjema (ENSLAPP)	boudjema@lapvax.in2p3.fr
Extended Gauge	A. Djouadi (Montreal)	djouadi@lps.umontreal.ca
SUSY	M. Peskin (SLAC)	mpeskin@slac.stanford.edu
	K. Fujii (KEK)	fujiik@jlcux1.kek.jp
Other Options	D. Miller (UC London)	djm@v1.ph.ucl.ac.uk
Experimentation	T. Tauchi (KEK)	tauchi@kekvax.kek.jp
Concluding Remarks	D. Burke (SLAC)	daveb@slacvm.bitnet

Registration and Information Desks

The conference fee is 30,000 yen and includes attendance at all sessions, a copy of proceedings, session breaks, a banquet on Monday evening, and lunch for working days. Cash in Japanese Yen only can be accepted. The registration desk will be open in the evening of September 7 from 17:00 to 20:30, and in the morning of September 8 from 7:30 to 9:30 at the Hotel Appi Grand.

Information Desk will undertake registrations after the Registration Desk has been closed. The Information Desk will also treat copy requests, reservations of excursions and social events, and message services. The information desk will open from 8:00 to 18:00 through the workshop period.

Proceedings

The proceedings of the workshop will be published, and a copy will be sent to each registered participant.

All speakers are requested to return manuscripts by December 1st.

Session Rooms

All plenary sessions will be held at the Appi Plaza, which is a few minutes' walk from the Hotel Appi Grand. Parallel sessions of Higgs, Strongly Interacting Higgs, SUSY, and Experimentations will also be held at the Appi Plaza, while those of Top/QCD, Extended Gauge, W/Z, and Other Options will be held at a room *Ryugamori* in the Hotel Appi Grand.

Coffee will be served at each session break at each room.

Network Service

Computer terminals will be provided for mailing purpose at a room *Hanawa*, next to the parallel session room *Ryugamori*. Operation manuals are put beside the terminals.

Transparency Copy Service

Copies of the transparencies of talks are available with cost of 200yen/copy for each talk. Please fill out the Transparency Copy Order Forms, and submit them to the Information Desk. Payment should be done when you pick up the copies at the Information Desk.

Order forms for all parallel session talks should be submitted by Sep.11, 18:00. Order forms for plenary talks of Sep.8 and Sep.11 should be submitted by Sep.12, 10:00.

If the copies are in the stock, you can receive them at the ordering time. Otherwise you will receive them next day usually, except for talks on Sep.12.

Ordering for plenary talks on the last day is special. If you will leave the hotel on Sep.12, please submit the order form by 13:00 of Sep.12 for all plenary talks on Sep.12 including afternoon talks, so that you can get the copies before you leave. The copies will be available from 15:00 to 16:00 of Sep.12.

If you will leave the hotel on Sep.13, please submit the order forms before 15:00 of Sep.12. The copies will be available from 17:00 to 19:00 of Sep.12.

Please do not forget to mark your departure date on the ordering form.

Lunch

A set of four lunch tickets is included in the registration package for lunches of Sep. 8, 9, 11 and 12. Extra lunch tickets may be purchased at the Information Desk with 6000 yen/set. Lunches are served at the Terrace Restaurant at the second floor of the hotel,

Tour Desk

VIEWPLAZA of JR East Japan provides a tour desk during the workshop period at the lobby near *Ryugamori*.

Hotel

Special discount room charge rates of 8000 yen per night (plus tax) for single occupancy, and 12000 yen per night (plus tax) for double occupancy have been arranged for all participants. Breakfast is included in the charge.

Accommodation fee itself should be paid at the tour desk of ViewPlaza at the earliest opportunity. Other things such as telephone calls or room services should be directly paid to the Hotel Appi Grand when you check out.

The hotel has a variety of recreational activities inside and outside of the hotel; an indoor swimming pool, a squash court, an athletic room, tennis courts, and a near-by horse-riding club and a golf club. Lifts are operated on Saturdays and Sundays, which bring you to the top of the mountain in front of the hotel. Please consult with the Reception Desk of the Hotel Appi Grand.

Currency

The official currency for the workshop is Japanese Yen. Credit cards will be accepted only for payment to the VIEWPLAZA of JR East Japan and payment to the hotel. VIEWPLAZA or the Hotel will not accept traveler's checks.

A branch of Iwate Bank, which was announced to be open during the workshop period, will not be open. Please consult with the workshop office for money exchange.

Social Events and Excursions

Welcome Drinks

A casual free-to-join welcome party will be held on the evening of Thursday, September 7, at a terrace at the second floor. It will begin around 18:00.

Reception

There will be a reception at the Hotel Morioka Grand on Friday, September 8, from 18:30 to 20:00. All participants and accompanying persons are invited to the reception. Free shuttle buses will leave the Hotel Appi Grand at 17:00. Free shuttle buses returning to the Hotel Appi Grand will also be arranged after the reception.

Banquet

There will be a banquet at the room *Ryugamori*, used for one of parallel sessions, on Monday, September 11, from 18:30 to 20:00. The cost is included in the registration fee. Extra tickets (5000 yen) may be purchased for accompanying persons at the Information Desk.

Excursions

On Sunday, September 10, a half-day excursion and a one-day excursion have been programmed. The half-day excursion will visit Hachimantai-mountains national park and near-by forest and a water-fall. The one-day excursion will visit Motuji temple and

Chuusonji temple in Hiraizumi city, and Geibikei gorge. Both excursions will leave the hotel at 8:00 in the morning.

The half-day excursion will come back to the hotel by noon so that participants can have lunch at the hotel by themselves. The fee is 2000 yen/person.

The one-day excursion will come back to the hotel around 17:40. The fee is 4000 yen/person. Lunch is not included in the excursion fee. The excursion will have a stop at a restaurant so that participants can have lunch by themselves.

There are some seats left for each excursion bus. For those seats, tickets can be purchased at the Information Desk in order of application.

Marathon

A relay-race marathon meeting will be held in the morning of Sep.10 near the hotel by a local TV company. Though this is independent of LCWS95, everyone is encouraged to join it. Registration can be done on September 9. Please consult with the Information Desk for detail.

Tea Ceremony

A Japanese tea ceremony will be held on September 10, from 18:00 in a traditional Tea Ceremony Room at the hotel. Registration can be done at the Information Desk.