

Second Circular (revised '99/6/2)

International Workshop on Atomic Collisions and Atomic Spectroscopy with Slow Antiprotons

July 19-21, 1999, Tsurumi, Kanagawa, Japan

IMPORTANT: *The workshop site has been CHANGED, which, we believe, will make the Workshop even more exciting! (Please read it carefully. It contains new information about travel, hotel reservation, etc.)*

Scope and main subjects of the Workshop:

The antiproton decelerator (AD) dedicated to atomic physics and related fields will start its operation in 1999 after three years since the termination of LEAR in 1996. It is therefore a good time to have a workshop on atomic physics with slow antiprotons and related fields to summarize the past, to have a common understanding of the antiproton facility, and to discuss various aspects and future of the slow antiproton science. The workshop will be held in Tsurumi near Tokyo and Yokohama three days in advance to the XXIst ICPEAC (<http://www.chem.titech.ac.jp/~icpeac/>) as a satellite meeting. The date and location is determined so that the attendees of the ICPEAC who are interested in the subject can easily join the Workshop on their way from Narita Airport to Sendai. The major topics of the workshop will be;

**Excitation and Ionization of Atoms, Molecules, Clusters with Slow Antiprotons*

**Interaction of Slow Antiprotons with Matter; Stopping Power, Channeling, etc.*

**Formation Processes of Antiprotonic Atoms and Antihydrogen*

**Spectroscopy of Antiprotonic Atoms*

**Behavior of non-neutral plasmas with exotic particles*

Organization: The Antimatter Science Project, University of Tokyo

co-sponsored by

The Center for CERN related Atomic and Nuclear Physics of the Danish

Natural Science Research Council, and

RIKEN.

International Advisory Board:

J.Burgdoerfer, J.S.Cohen, R.Hayano, M.H.Holzscheiter, D.Horvath, M.Inokuti, H.Knudsen, K.Komaki, T.Yamazaki, Y.Yamazaki,

Organizing Committee: R.Hayano, H.Knudsen, K.Komaki, T.Yamazaki, Y.Yamazaki

Workshop Chairman: Ken-ichiro Komaki

Address of Correspondence

Yasunori Yamazaki or Ms. Chikako Kuramochi (Workshop secretary)
Antiproton Workshop, Institute of Physics, University of Tokyo, Komaba
3-8-1, Komaba, Meguro-ku, Tokyo, 153-8902, Japan
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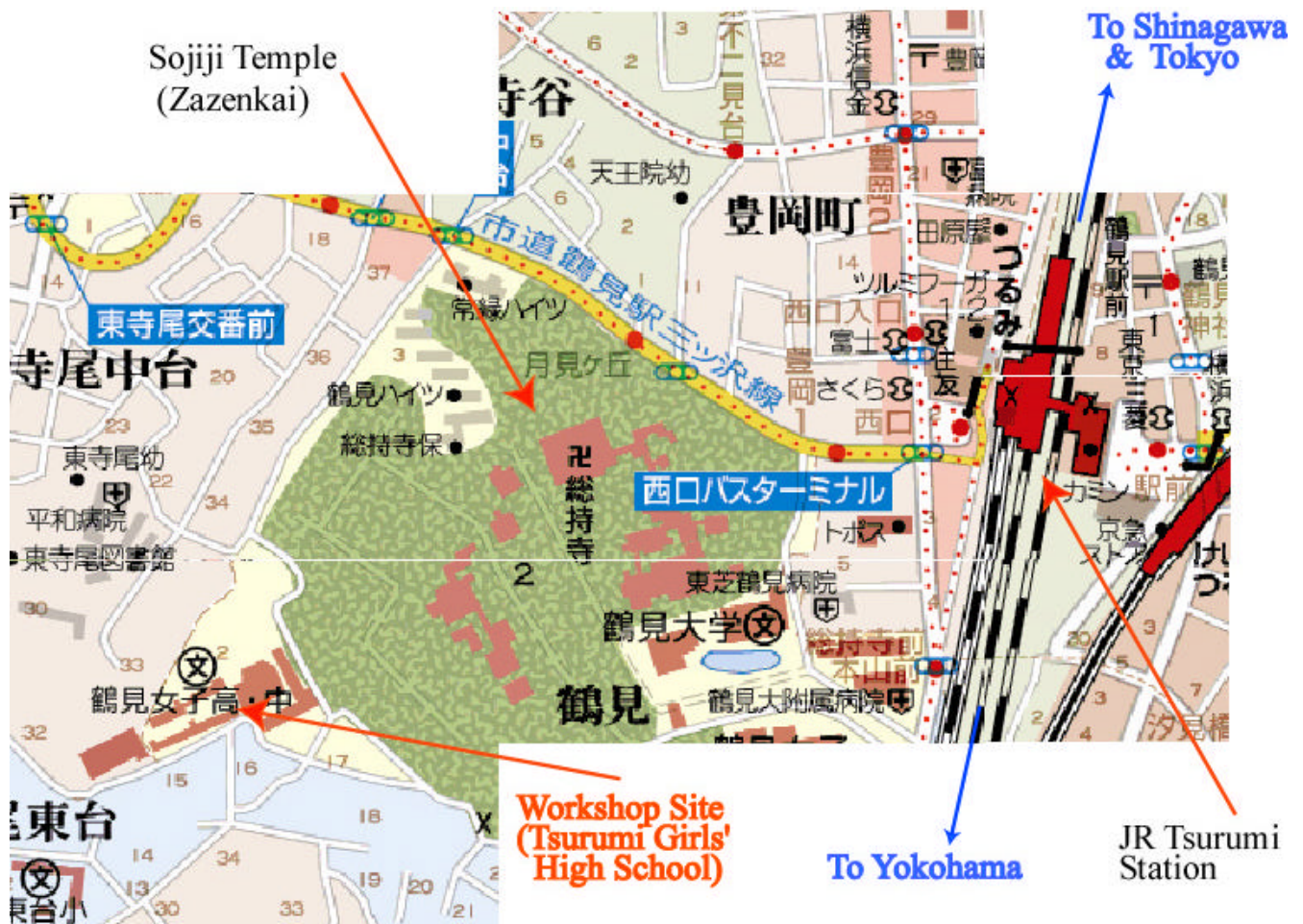
Workshop Schedule & Sites:

July 19th-20th: [Tsurumi Girl's High School at Sojiji-Temple](#) (see the attached map)

July 21st: [Shinagawa Prince Hotel](#)

| | Morning session(1) 9:00-10:30 | | Morning session(2) 11:00-12:30 | | Afternoon Session(1) 14:00-15:30 | | Afternoon Session(2) 16:00-17:30 | Evening Session | |
|------------------|----------------------------------|----------------------------|-----------------------------------|-----------------------|-------------------------------------|----------------------------|-------------------------------------|-----------------|---------|
| 18 th | | | | | | | | welcome drink | |
| 19 th | | c o f f e e | | l u n c h | | C o f f e e | | Z a z e n k a i | |
| 20 th | | | | | | | | | banquet |
| 21 st | | | | | | | | | |

There will be a chartered bus service from Shinagawa Prince Hotel to Tsurumi Girl's High School in the morning and from Tsurumi Girl's High School to Shinagawa Prince Hotel in the afternoon during the Workshop .



Accommodation:

A block of rooms are reserved at Shinagawa Prince Hotel near Shinagawa Station of JR with a special discount rate for the workshop. The hotel has a direct connection from Narita Airport by the limousine bus (<http://www.narita-airport.or.jp/limousine/nrtdep.html>)

The **Hotel Reservation** must be made by **June 10**, 1999 with the reservation form attached below.

| Room Rate | Single | Twin |
|-------------------|--------|---------|
| With Breakfast | ¥9,800 | ¥17,800 |
| Without Breakfast | ¥9,200 | ¥16,300 |

(service charge included, tax not included)

The web site of the hotel is http://www.princehotels.co.jp/english/search_menu1/05000000/08000001.html

Registration Fee:

The registration fee is ¥20,000, which includes the abstract book, coffee during coffee break, and all the Social Program (for details, see below).

The registration fee for the accompanying person(s) is ¥10,000, which includes all the Social Program. Some financial support will be available for students and for invited speakers.

The registration desk will open at the Hotel on July 18 (Sunday) in front of the room where the Welcome Drink is served. The registration fee (¥20,000) must be paid at the desk. We can only accept Japanese Yen in cash. The scientific session of the Workshop will start on Monday morning.

Accompanying Persons

All participants and accompanying persons are invited to the Welcome Drink, which will be served at Shinagawa Prince Hotel on Sunday from 7:30 p.m. Accompanying persons are also most welcome to participate all the social activities of the Workshop.

Scientific Program

A tentative list of Invited Speakers (in alphabetical order) and the title of the talks:

| | |
|----------------|--|
| T.Azuma | Does a solvated antiproton exist ? |
| J.S.Cohen | Isotope effects on antiproton capture |
| K.Fine | Nonneutral plasmas and antihydrogen production |
| M.Fujiwara | Muon catalyzed fusion studies with a muonic hydrogen beam at TRIUMF |
| R.Hayano | Laser spectroscopy of protonium |
| M.Holzscheiter | Ultra-Low Energy Antihydrogen: How do we get there, what can we learn from it |
| M.Hori | High-precision, two-photon laser spectroscopy of antiprotonic helium atoms and other experiments using ultra-low density |
| T.Ichioka | Status report of the ASACUSA antiproton trapping system |
| A.Igarashi | Ionization of atomic hydrogen with slow antiprotons |
| N.Kabachnik | Channeling of slow antiprotons |
| Y.Kino | Non-Adiabatic High-Precision Calculation of Antiprotonic Helium Atomcule and Determination of Antiproton Mass |
| H.Knudsen | Experimental data on ionization and energy loss for antiprotons colliding with matter |
| K.Komaki | Antimatter Science with Slow Antiprotons |
| G. Ya Korenman | Collisions of antiprotonic atomcules with He atoms |
| V. Korobov | Spectroscopy of the antiprotonic atomcule |
| A.Kover | Post Collision Interaction at Proton, Antiproton - Atom Collisions |
| P. Krstic | Ionization of ions and atoms by slow antiprotons |
| C.D.Lin | Antiproton collisions with H and He targets revisited |
| E.Morenzoni | A new low energetic muon beam and its applications |
| K.Ohtsuki | Antiprotonic lithium atom ; formation, energy levels and stability |
| S.E.Schippers | Recombination of H-like ions with electrons: a theoretical and experimental testing ground for the formation of anti-hydrogen? |

| | |
|--------------------|---|
| H.Schmidt-Boecking | Comparison of double differential ionization cross in fast antiproton and proton on Helium collisions |
| R.Schuch | An accurate measurement of the p mass using highly charged ions in a Penning trap |
| H.Totsuji | Two-Component Nonequilibrium Nonneutral Plasma in Penning-Malmberg Trap: Theory and Simulation on Relaxation and Equilibrium in Electron-Antiproton Plasma |
| M.Wada | Transport of ultra slow antiproton beam with an RF guide |

Abstract Deadline:

Abstracts (A4, 1-2 pages) are to be submitted by **June 10th**, 1999 to the following address preferably via email. We could accept tex, Word, and pdf files.

Yasunori Yamazaki or Ms.Chikako Kuramochi, Antiproton Workshop
Institute of Physics, University of Tokyo, Komaba
3-8-1, Komaba, Meguro-ku, Tokyo, 153-8902, Japan
tel:03-5454-6521, fax:03-5454-6433
email:pbar99@radphys4.c.u-tokyo.ac.jp

Social Program:

Welcome Drink: July 18th 7:30pm at Shinagawa Prince Hotel

Zazenkai: July 19th A Special Lecture & Zazenkai at Sojiji Temple

A tour to Zen temple (Sojiji temple) near the workshop site is scheduled in the evening of July 19th, which consists of

(1) a special Lecture on **Zen Garden as an Expansion of Mind** by Mr. Masuno (Zen Priest, Garden Architect, and, at the same time, Visiting Prof. of British Columbia Univ.)

(2) Zazen conducted by Mr. Saikawa, Zen Priest at Sojiji Temple (the detailed schedule is given below)

5:00pm Supper

6:15-7:05 Special Lecture: Zen Garden as an Expansion of Mind by Shunmyo Masuno

7:15-8:05 Dharma Talk by Mr. Dosho Saikawa

8:15 Zazen Session

8:45 Explanation and Instruction of Morning Service

9:00 Light out

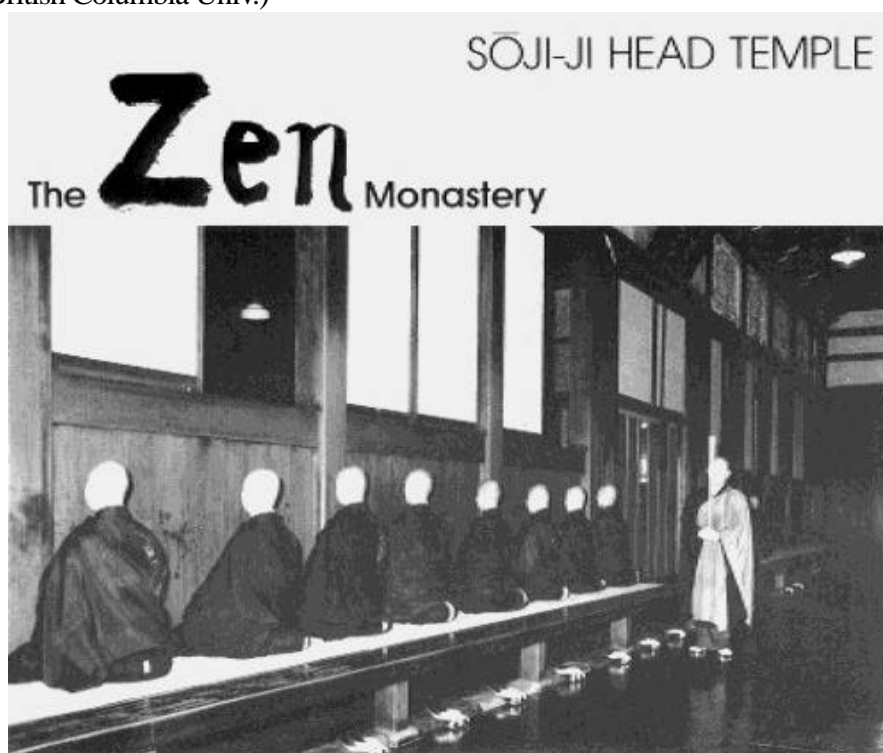
3:30am Wake up

4:00 Morning Zazen Session

5:00 Morning Service/ Ceremony

7:00 Breakfast

8:00 Zazen, dharma talk, tour of Sojiji, or a discussion about Zazen



Workshop Banquet: July 20th 7:00pm at Shinagawa Prince Hotel

Important Dates:

| | |
|---|---------------------------------|
| First Announcement | Nov.98 |
| Preliminary reg. | March 99 |
| Abstract & Registration | June 10th, 99 |
| Hotel, Bullet Train, Social Events | June 10th, 99 |
| <i>Final Announcement</i> | <i>June 99</i> |
| <i>This Workshop</i> | <i>July 19-21</i> |
| (ICPEAC) | July 22-27) |

Some Useful Information

Travel information on Japan: <http://www.jnto.go.jp/>

Limousine bus timetable from Narita Airport to the hotel: <http://www.narita-airport.or.jp/limousine/nrtdep.html>

Workshop Registration Form

Please fill the registration form below and send it to the following address preferably via **EMAIL** at your earliest convenience but **NOT** later than **June 10th** to:

Yasunori Yamazaki or Ms.Chikako Kuramochi
Antiproton Workshop
Institute of Physics, University of Tokyo, Komaba
3-8-1, Komaba, Meguro-ku, Tokyo, 153-8902, Japan
tel:03-5454-6521
fax:03-5454-6433
email:pbar99@radphys4.c.u-tokyo.ac.jp

Your email or fax should be acknowledged soon. If you do not hear from us within a week, please send your email to yasunori@postman.riken.go.jp

Family Name _____ First and Middle Names _____
Title _____
Institution _____ Address _____
City _____ Zip Code _____ Country _____
Phone _____ Fax _____ E-mail _____
Name(s) of Accompanying Person(s) _____

Hotel, Tohoku Bullet Train, & Social Event Reservation Form

For INTERNATIONAL WORKSHOP ON ATOMIC COLLISIONS AND ATOMIC SPECTROSCOPY WITH SLOW ANTIPROTONS, July 19-21, 1999, Tsurumi, Japan

Please complete and **fax** this form to Leadman Universe Co. 3-1-2, Kamimeguro, Meguro-ku, Tokyo, at your earliest convenience but **NOT** later than **June 10th**. **The FAX number is +81-3-3793-7500**

Family Name _____ First and Middle Names _____
 Title _____ Institution _____ Address _____
 City _____ Zip Code _____ Country _____
 Phone _____ Fax _____ E-mail _____
 Name(s) of Accompanying Person(s) _____
 Arrival Schedule: Arriving at _____ (airport) on _____ (date)

Room Reservation at Shinagawa Prince Hotel

Date of check-in _____ **Date of check-out** _____

Please reserve _____ (single, twin) room(s) for _____ person(s) (with, without) breakfast

Payment is requested to be made by **cash** or **credit card** at the time of check out.

| Room Rate | Single | Twin |
|-------------------|--------|---------|
| With Breakfast | ¥9,800 | ¥17,800 |
| Without Breakfast | ¥9,200 | ¥16,300 |

Seat Reservation for Tohoku Bullet Train from Tokyo to Sendai

A one way ticket with a reserved seat costs ¥10,790 from Tokyo to Sendai.

(Note: The cancellation fee is at the maximum ¥2,000/case.)

- I (we) need** _____ seat(s) from Tokyo to Sendai.
 I (we) do not need the ticket reservation

Zazenkai at Sojiji Temple on July 19

- I (we) will join**
 I (we) will not join

Note : It is free to join the Zazenkai. If you join the Zazenkai at Sojiji, we will **not** reserve your room at Shinagawa Prince Hotel on July 19th unless otherwise requested from you. We will arrange a stock room so that you could leave your luggage at the hotel.