



US-Japan Joint Seminar: Coherent Quantum Systems

Sponsored by the NSF and JSPS

Newport, RI
September 17-21

(View using MS Internet Explorer; Navigation bar at bottom of window)

Background

The past three years have seen the development of unprecedented methods to manipulate and investigate the coherence properties of simple quantum systems involving atoms and photons. Examples include the experimental observation interference between two initially isolated condensates; the demonstration of atom holographic techniques; the study of the phase evolution of two species condensates; the experimental beginnings of non-linear atom optics, the creation of entangled states with ions; theoretical advances in quantum computing; the observation of slow group velocities in a Bose-

Einstein condensates; the demonstration of quantum teleportation – to name a few.

With this explosion in growth of methods in a diverse group of physical systems, the opportunity for catalyzing advances by bringing together researchers from the international community at this moment is substantial. A US/Japan joint seminar in the general area of quantum optics and atomic physics was last held in September 1997 in Kusatsu, Japan -- prior to a majority of the groundbreaking work detailed above.

Participants

Bigelow	Hemmerich	Koashi	Takahashi
DeMille	Hirano	Minardi	Ueda
Doherty	Ho	Moore	Yabuzaki
Doyle	Hori	Nogues	Yamaguchi
Gonokami	Hulet	Orozco	Yasuda
Hakuta	Imoto	Prentiss	
Hall	Inouye	Prichard	
Hau	Kasevich	Romalis	
Heinzen	Katori	Sasada	
Helmerson	Kitano	Shimizu	

Location

Newport, RI

Newport is serviced by a major airport in Providence, RI 30 min. away. It is conveniently located midway between Boston (1.5 hours drive, train service available) and New Haven (1.5 hours drive, train service available). Newport is world renowned for its picturesque location, turn-of-the-century mansions, and stiff afternoon America's Cup breezes. The Hotel Viking is within walking distance of downtown restaurants and docks, as well as Newport's parks and recreation areas.



Newport information:
[Yahoo Newport Guide](#)

Hotel Viking

(Excerpted from the Hotel Viking web-site!)

In the heart of Newport, Rhode Island, the Hotel Viking is within easy walking distance of the waterfront, the historic district and many of Newport's fine shops. The Viking offers 237 affordably priced guest rooms, with charming period furnishings. It is listed on the National Register of Historical Places and is a prestigious member of Historic Hotels of America and reflects the true character and spirit of Newport. The Viking boasts fine dining in the Bellevue Bar and Grille and offers the best view in town from its rooftop bar, The Top of Newport.

PHONE 800.556.7126

FAX 401.848.4864



Hotel web-site:
www.hotelviking.com

US-Japan Seminar 2000

Travel Directions

Coherent Quantum Systems

Shuttle

Providence, RI is the closest major airport that services Newport, RI. It is approx. 30 min. by car to the conference hotel. An inexpensive shuttle service (\$15 one way), which runs hourly, is available from the airport. Call 401 846 2500 for reservation (or if you prefer, indicate that you would like us to make the reservation for you (please provide flight information -- email: usjapan@amo.physics.yale.edu.)



Hotel Address:
1 Bellevue Ave.

(Note: cross marks
the spot. Map
accuracy has not
been verified)

Driving

FROM T. F. GREEN AIRPORT

Take 95 South to Route 4 then follow signs to Newport and the Newport Bridge (toll). Take first exit off Newport Bridge (Scenic Newport) and a right at the end of the exit ramp. Go straight through the first set of lights. Bear to the left at the second set of lights after the cemetery. This is Thames Street. At the next set of lights, take a left (Washington Square; movie theatres on right) and follow up the hill to the second set of lights. The Hotel Viking is on the right, approximately a 35 minute drive.

FROM POINTS NORTH (BOSTON AREA)

Leave Boston area on Route 128 South to Route 24 South, which then becomes Route 114 South. Follow Route 114 South into Newport to Ayrault Street; look for Hotel Viking sign on left. Take a left onto Ayrault Street and a right at the stop sign (Kay Street). The Hotel Viking will be located straight ahead, approximately a 1 1/2 hour drive.

FROM POINTS SOUTH (NEW YORK AREA)

Follow 95 North to Rhode Island exit 3 (Route 138 East) and signs for the Newport Bridge. Cross the Bridge (toll) and take first exit off Bridge (Scenic Newport). Take a right at end of exit ramp. Go straight through the first set of lights. Bear to the left at the second set of lights after the cemetery. This is Thames Street. At the next set of lights take a left (Washington Square; movie theatres on right), and follow up the hill to the second set of lights. The Hotel Viking is on the right, approximately a 3 1/2 hour drive from New York City.

US-Japan Seminar 2000 Coherent Quantum Systems Program Synopsis

Reception Sunday evening, 7 pm., Hotel Viking

	Monday	Tuesday	Wednesday	Thursday
7:30	Light breakfast			
8:00	Atom Optics Prichard Shimizu Prentiss	Laser cooling Katori Hermerich Takahashi	Spectroscopy Hall Sasada Hakuta	Squeezing Bigelow Ho Kasevich
8:40				
9:20				
10:00	Coffee break			
10:30	BEC and degeneracy Helmerson Inouye Moore	Quantum Coherence Effects Hau Gonokami Minardi	Precision measurement DeMille Yabuzaki Romalis	Quantum information Kitano Yamaguchi
11:10				
11:50				
12:30	Adjourn for lunch			
	DISCUSSION	DISCUSSION	DISCUSSION	
4:00	Cavity QED Nogues Orozco	Ultra-cold molecules Doyle Heinzen	Quantum communication Hirano Koashi Imoto	
4:40				
5:20	Break			
5:40	Hori Doherty	and BEC Ueda Hulet		
6:20				
7:00	Adjourn fo dinner			BANQUET

US-Japan Seminar 2000 Coherent Quantum Systems

Sunday

Reception	(Sunday 7 pm)
Location: Hotel Viking	

Monday

Atom optics	(Monday 8-10 am)
Prichard	Atom Optics: Old ideas, Current Technology and New Results
Shimizu	Quantum reflection of cold atoms on a solid surface
Prentiss	Single state atom lithography
BEC and degeneracy	(Monday 10:30-12:30)
Helmerson	Atom-optics with Bose-Einstein condensates
Inouye	Does matter wave amplification work for fermions?
Moore	Atomic four-wave mixing: Fermions vs. Bosons
Cavity QED	(Monday 4-7pm)
Nogues	Controlled entanglement in cavity QED
Orozco	Conditional Time Evolution of Wave-Particle Correlations in Cavity QED
Hori	Properties of atom-photon interaction in optical near field
Doherty	Trapping and tracking single atoms in cavity QED

Tuesday

Laser cooling	(Tuesday 8-10)
Katori	Laser cooling of strontium atoms toward quantum degeneracy
Hemmerich	Ultracold Metastable Calcium Ensembles, towards high phase space densities by all optical means.
Takahashi	Laser cooling and trapping of ytterbium atoms
Quantum coherence effects	(Tuesday 10:30-12:30)
Hau	Taming light to bicycle speed in an ultra-cold atomic gas
Gonokami	Coherent control and interference of cold biexciton waves
Minardi	Dynamics and Interference of two Bose condensates
Ultra-cold molecules and BEC	(Tuesday 4-7)
Doyle	Magnetic Trapping -- Molecules and the Big Bang
Heinzen	Interactions between molecules and an atomic BEC
Ueda	Collapsing dynamics of a Bose-Einstein condensate with attractive interaction
Hulet	Probing the dynamics of a Bose-Einstein condensate by Molecular Spectroscopy

Wednesday

Spectroscopy		(Wednesday 8-10)
Hall	Union of the UltraStable and UltraFast: cw laser tools in FemtoLand and vv.	
Sasada	Observation of dressed-molecules in infrared-rf double resonance spectroscopy	
Hakuta	Sold hydrogen as a nonlinear optical medium	
Precision measurement		(Wednesday 10:30-12:30)
DeMille	Search for the electron dipole moment using metastable PbO	
Yabuzaki	Realization of alkali vapor cell at a liquid helium temperature towards spin-related fundamental physics	
Romalis	Search for violation of time-reversal symmetry using diamagnetic atoms.	
Quantum communication		(Wednesday 4-6)
Hirano	Quantum cryptography using balanced homodyne detection	
Koashi	A principle behind no-cloning and no-imprinting theorems	
Imoto	Quantum key distribution and its variations	

Thursday

Squeezed atomic states		(Thursday 8-10)
Bigelow	Generation of spin-squeezing via continuous qnd measurement	
Ho	Effects of Degeneracies on the Coherence of Dilute Bose Gas	
Kasevich	Quantum many-atom state manipulation with Bose-Einstein condensates	
Quantum information		(Thursday 10:30-11:50)
Kitano	Quantum and classical Zeno circuits	
Yamaguchi	Crystal lattice quantum computer and concurrent implementation of quantum algorithms	

US-Japan Seminar 2000 Coherent Quantum Systems

Participants

Participant	Title	Attendance Dates
Bigelow	Generation of spin-squeezing via continuous qnd measurement	20-21
DeMille	Search for the electron dipole moment using metastable PbO	17-21
Doherty	Trapping and tracking single atoms in cavity QED	17-21
Doyle	Magnetic Trapping -- Molecules and the Big Bang	17-21
Gonokami	Coherent control and interference of cold biexciton waves	17-21
Hakuta	Sold hydrogen as a nonlinear optical medium	17-21
Hall	Union of the UltraStable and UltraFast: cw laser tools in FemtoLand and vv.	17-22
Hau	Taming light to bicycle speed in an ultra-cold atomic gas	17-19
Heinzen	Interactions between molecules and an atomic BEC	17-20
Helmerson	Atom-optics with Bose-Einstein condensates	17-21
Hemmerich	Ultracold Metastable Calcium Ensembles, towards high phase space densities by all optical means.	17-21
Hirano	Quantum cryptography using balanced homodyne detection	17-20
Ho	Effects of Degeneracies on the Coherence of Dilute Bose Gas	17-21

Hori	Properties of atom-photon interaction in optical near field	17-21
Hulet	Probing the dynamics of a Bose-Einstein condensate by Molecular Spectroscopy	18-21
Imoto	Quantum key distribution and its variations	17-21
Inouye	Does matter wave amplification work for fermions?	17-21
Kasevich	Quantum many-atom state manipulation with Bose-Einstein condensates	17-21
Katori	Laser cooling of strontium atoms toward quantum degeneracy	17-21
Kitano	Quantum and classical Zeno circuits	17-21
Koashi	A principle behind no-cloning and no-imprinting theorems	17-20
Minardi	Dynamics and Interference of two Bose condensates	17-21
Moore	Atomic four-wave mixing: Fermions vs. Bosons	17-21
Nogues	Controlled entanglement in cavity QED	17-21
Orozco	Conditional Time Evolution of Wave-Particle Correlations in Cavity QED	17-21
Prentiss	Single state atom lithography	17-21
Prichard	Atom Optics: Old ideas, Current Technology and New Results	17-18
Romalis	Search for violation of time-reversal symmetry using diamagnetic atoms.	17-21
Sasada	Observation of dressed-molecules in infrared-rf double resonance spectroscopy	17-21

Shimizu	Quantum reflection of cold atoms on a solid surface	16-20
Takahashi	Laser cooling and trapping of ytterbium atoms	17-21
Ueda	Collapsing dynamics of a Bose-Einstein condensate with attractive interaction	17-21
Yabuzaki	Realization of alkali vapor cell at a liquid helium temperature towards spin-related fundamental physics	17-20
Yamaguchi	Crystal lattice quantum computer and concurrent implementation of quantum algorithms	17-21
Yasuda	Observer	17-21

[Get and give travel advice](#)
[Yahoo! Experts](#)

CLICK HERE TO BECOME DEBT FREE.

CONTINUE

[Eliminate Your Debt - Click Here](#)

Yahoo! Travel - Newport

[Travel](#) > [North America](#) > [United States](#) > [Rhode Island](#) > [Newport](#)

Newport Sections

► [Destination Information](#)
[Book Your Trip](#)

Weather

[Providence, RI](#) 63...77 F 

Health Information

from: [Highway to Health](#)

Ambulance: 911

Police: 911

Fire: 911

Notable Hospital(s):

• Newport Hospital

Recommended Vaccinations:

Hepatitis B, Rabies, Booster Shots

[...More health information](#)

[Disclaimer](#)

Search

Search all of Yahoo! Travel
Search only in **Newport**

Web Sites and Recommendations

Recommendations From: [The Rough Guide to Travel](#)

 [Dining](#)
Restaurants, Reviews...

 [Lodging](#)
Hotels, Resorts...

 [Nightlife](#)
Bars, Clubs, Theatre...

 [Points of Interest](#)
Museums, Parks, Zoos...

[Yahoo! Get Local: Newport](#)

Featured Photo

from [Corbis](#)



Corbis
Mansion in Newport

Featured Article

From: [National Geographic Traveler](#)

Newport, Rhode Island

By: Christopher Buckley



The first time I saw Newport, I tried not to cry. The fault was not Newport's, actually. It was a rainy, gray day...

[continue](#)

Meet Travelers

- [Travel Clubs](#)
- [Message Boards](#)
- [Travel Chat Room](#)

The Hotel Viking

One Bellevue Avenue - Newport, Rhode Island



In the heart of Newport, Rhode Island, the Hotel Viking is within easy walking distance of the waterfront, the historic district and many of Newport's fine shops. The Viking offers 237 affordably priced guest rooms, with charming period furnishings. It is listed on the National Register of Historical Places and is a prestigious member of Historic Hotels of America and reflects the true character and spirit of Newport. The Viking boasts fine dining in the *Bellevue Bar and Grille* and offers the best view in town from its rooftop bar, *The Top of Newport*.

PHONE 800.556.7126 FAX 401.848.4864

Yesterday & Today	Guest Rooms	Getting Here	Conference Facilities	Special Deals	Reservations On-Line	Email Us
---------------------------------------	-----------------------------	------------------------------	---------------------------------------	-------------------------------	--------------------------------------	--------------------------

[\[Yesterday and Today\]](#) [\[Guest Rooms\]](#) [\[Getting Here\]](#) [\[Conference Facilities\]](#)
[\[Special Deals\]](#) [\[Contact Us\]](#) [\[Marketing Affiliations\]](#) [\[Employment\]](#)



US-Japan Joint Seminar:
Coherent Quantum Systems

Sponsored by the NSF and JSPS

Newport, RI
September 17-21

(View using MS Internet Explorer; Navigation bar at bottom of window)
Background

The past three years have seen the development of unprecedented methods to manipulate and investigate the coherence properties of simple quantum systems involving atoms and photons. Examples include the experimental observation of interference between two initially isolated condensates; the demonstration of atom holographic techniques; the study of the phase evolution of two species condensates; the experimental beginnings of non-linear atom optics; the creation of entangled states with ions; theoretical advances in quantum computing; the observation of slow group velocities in a Bose-

Einstein condensates; the demonstration of quantum teleportation – to name a few.

With this explosion in growth of methods in a diverse group of physical systems, the opportunity for catalyzing advances by bringing together researchers from the international community at this moment is substantial. A US/Japan joint seminar in the general area of quantum optics and atomic physics was last held in September 1997 in Kusatsu, Japan -- prior to a majority of the groundbreaking work detailed above.

Participants

Bigelow
DeMille
Doherty
Doyle
Gonokami
Hakuta
Hall
Hau
Heinzen
Helmerson

Hemmerich
Koashi
Hirano
Minardi
Ho
Moore
Hori
Nogues
Hulet
Orozco
Imoto
Prentiss
Inouye
Pritchard
Kasevich
Romalis
Katori
Sasada
Kitano
Shimizu

Takahashi
Ueda
Yabuzaki
Yamaguchi
Yasuda

Location

Newport, RI
Newport is serviced by a major airport in Providence, RI 30 min. away. It is conveniently located midway between Boston (1.5 hours drive, train service available) and New Haven (1.5 hours drive, train service available). Newport is world renowned for its picturesque location, turn-of-the-century mansions, and stiff afternoon America's Cup breezes. The Hotel Viking is within walking distance of downtown restaurants and docks, as well as Newport's parks and recreation areas.



Newport information:
[Yahoo Newport Guide](#)

Hotel Viking

(Excerpted from the Hotel Viking web-site)

In the heart of Newport, Rhode Island, the Hotel Viking is within easy walking distance of the waterfront, the historic district and many of Newport's fine shops. The Viking offers 237 affordably priced guest rooms, with charming period furnishings. It is listed on the National Register of Historical Places and is a prestigious member of Historic Hotels of America and reflects the true character and spirit of Newport. The Viking boasts fine dining in the Bellevue Bar and Grille and offers the best view in town from its rooftop bar, The Top of Newport.
PHONE 800.556.7126
FAX 401.848.4864



Hotel web-site:
www.hotelviking.com