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The 1987 Atomic Physics Gordon Conference was held in Wolfeboro NH, July 6-10, 1987, with an attendance of 80 people. Topics covered included Atoms in High Magnetic Fields, Atoms in High Optical Fields, Multi-electron Excitation of Atoms, Relativistic Spectra of Atoms, Atoms in Traps, Quantum Jumps, Squeezed States, Muon Induced Fusion, Microwave Ionization of Atoms and Chaos in Atomic Ionization. A poster session was held in addition to the morning and evening sessions.

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FINAL PROJECT REPORT

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1987 GORDON CONFERENCE ON ATOMIC PHYSICS (July 6-10, 1987)

PRINCIPAL INVESTIGATOR: THOMAS J. MCILRATH

Submitting organization:
Gordon Research Conferences
University of Rhode Island
Kingston, Rhode Island 02881-0801

CHAIRMAN'S FINAL REPORT

1987 ATOMIC PHYSICS GORDON CONFERENCE
BREWSTER ACADEMY
WOLFEBORO, N. H.
JULY 6-10, 1987

THOMAS J. MCILRATH, CHAIRMAN
DAVID WINELAND, VICE-CHAIRMAN

The 1987 Atomic Physics Gordon Conference was held in Wolfeboro, N.H., July 6-10, 1987, with an attendance of 80 people. Topics covered included Atoms in High Magnetic Fields, Atoms in High Optical Fields, Multi-electron Excitation of Atoms, Relativistic Spectra of Atoms, Atoms in Traps, Quantum Jumps, Squeezed States, Muon Induced Fusion, Microwave Ionization of Atoms and Chaos in Atomic Ionization. A poster session was held in addition to the morning and evening sessions. Speakers were limited and discussion was extensive and spirited. A special evening talk was given by Professor Norman Ramsey on trapping of Neutrons. A copy of the program is attached.

The topics were chosen from areas of active work in Atomic Physics from recommendations of a panel consisting of the Chairman and vice-Chairman and Drs. R.R. Freeman(AT&T), C. Greene(LSU), K. Kirby(HCO-SAO), P. Lambropoulos(USC), H. Metcalf(SUNY-SB), W. Phillips(NBS), D. Pritchard(MIT) and S. Smith(NBS). Some topics did not exist two years ago at the last Atomic Physics Gordon Conference (e.g. Quantum Jumps) while others represent new advances in established fields (e.g. Relativistic Atomic Spectra). The primary foci of this meeting were atoms in intense static and oscillating fields, single atoms and the spectra of highly ionized or multiple excited atoms.

The attendees included the established researchers in atomic physics from academic, industrial and government laboratories as well as a large number of young postdoctoral and junior faculty scientists and graduate students. A dozen foreign scientists attended from Europe, South America, Asia and Australia. Less than half of these were invited speakers while others were regular attendees and participants attending wholly or largely on their own funds. A copy of the attendance list is attached.

The attendees chose Dr. David Wineland of the National Bureau of Standards, Boulder, Co., as chairman of the next Atomic Physics Gordon Conference. Dr. William E. Cooke of the University of Southern California was chosen as the vice-Chairman. It was unanimously requested that the next conference be held in two years (1989) at Wolfeboro, N.H. in the beginning of July.



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BREWSTER ACADEMY
WOLFEBORO, N.H.
JULY 6-10, 1987

Mon., July 6

- A. 9:00 a.m. (M. Metcalf presiding)
K. Welge: To be announced (Atoms in High Fields)
G. Wunner: To be announced (Atoms in High Fields)
- B. 7:30 p.m. (C. Clark presiding)
P. Lambropoulos: Multiphoton Ionization in Intense Fields
T.J. McIlrath: Above Threshold Ionization

Tues., July 7

- A. 9:00 a.m. (H. Kelley presiding)
W.E. Cooke: Correlated Motions of Excited Atomic Electrons
D. Shirley: Multiple Excitations of Atoms
C. Greene: Doubly Excited States and External Field Effects
- B. 7:30 p.m. (Y. Kim presiding)
J. Reader: Spectra of Highly Ionized Atoms: Comparisons with Relativistic Calculations
W. Johnson: Relativistic Calculations of Atomic Spectra

Wed., July 8

- A. 9:00 a.m. (D. Wineland presiding)
D. Pritchard: Light Forces on Atoms
A. Aspect: To be announced
J. Bjorkholm: Trapping and Cooling of Neutral Atoms
- B. 7:30 p.m. (P. Gould presiding)
R. Cook: Quantum Jumps and Zeno's Paradox
J. Bollinger: Liquid and Solid Plasmas

Thurs., July 9

- A. 9:00 a.m. (D. Kleppner presiding)
F. Himpfel: Two-Photon Photoemission from Image Potential States
B. Yurke: Squeezed States of Light
H.J. Kimble: Squeezed States of Light
- B. After Dinner Speaker, N. Ramsey: Trapping of Neutrons
- C. 8:00 p.m. - S. Jones: Muon Induced Fusion

Fri., July 10

- A. 9:00 a.m. (R. Jensen presiding)
P. Koch: Chaos
D. Richards: To be announced
J.C. Gay: Atoms in Fields

GORDON RESEARCH CONFERENCES
BREWSTER ACADEMY, WOLFEBORO, NEW HAMPSHIRE
6-10 July 1987
CHAIR: Thomas McIlrath
Atomic Physics

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