## **Precision Measurement and Fundamental Constants**

# NEWSLETTER

A Topical Group of The American Physical Society http://www.aps.org/units/pmfc

No. 25 March 2001

## 2001 Annual Meeting in Washington, D. C. April 28-May 1

The Annual Meeting of the Topical Group will be held in conjunction with the April Meeting of the APS at the Renaissance Hotel in Washington, D. C. For more information on the meeting, check the APS Meetings website at http://www.aps.org/meet/apr01/.

Sessions sponsored or co-sponsored by the Topical Group are:

## **Saturday, April 28, 14:30.**

**Session C9** Tests of Physics Laws. (Contributed session) Room 2, Renaissance Hotel.

Chair: Peter Mohr.

## **Annual Meeting Deadlines:**

Abstracts: 12 January
Early registration: 16 February
Postdeadline Abstracts: 9 March
Satellite Meeting Request: 20 March
Late registration: 30 March
Housing: 30 March

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## Sunday, April 29, 14:30.

**Session J9** (Joint with Topical Group on Gravitation) Experimental Gravity and Gravitational Radiation. (1 invited, 12 contributed talks)

Room2, Renaissance Hotel.

Chair: Clifford Will.

#### Invited talk:

14:30 Jens H. Gundlach (University of Washington) Precision Measurement of Newton's Constant

## Monday, April 30, 10:45.

**Session Q3** (Joint with Topical Group on Gravitation) Present Status and Future Prospects for LIGO, LISA and Gravity Probe B.

Renaissance East, Renaissance Hotel.

Chair: Gabriela Gonzales.

#### Invited talks:

10:45 Nergis Mavalvala (LIGO Laboratory, Caltech) Status of LIGO

11:21 Peter Fritschel *(MIT)* The Second Generation Gravitational Wave Detectors

11:57 Robin Stebbins (*University of Colorado*) Mapping the Gravitational Sky Between 0.1 mHz and 1 Hz

12:33 C.W.F. Everitt (*Gravity Probe B Team*) Gravity Probe B: Countdown to Launch

## Monday, April 30, 14:30.

**Session S4** Femtosecond Optical Frequency Comb Metrology. Renaissance West A, Renaissance Hotel. Chair: John Lawall.

Continued on page 2

## 2001 Annual Meeting in Washington, D. C., continued

Invited talks:

14:30 John Hall (JILA, NIST/University of Colorado) Along the Highway to Optical Clocks: an Overview

15:06 Alan Madej (National Research Council of Canada, Ottawa, Canada) Harnessing the Single Ion: Precision Measurements across the Optical Spectrum using a Trapped Strontium Ion Optical Frequency Standard

15:42 Thomas Udem (Max-Planck-Institut für Quantenoptik, Garching, Germany) Measuring the Frequency of Light with Femtosecond Laser Pulses

16:18 Jun Ye (*JILA, NIST/University of Colorado*) Phase stabilized femtosecond laser combs: From optical frequency synthesizer to quantum dynamics

16:54 Harald R. Telle (*Physikalisch-Technische Bundesanstalt,Braunschweig,Germany*) Femtosecond comb metrology at PTB

17:30 Scott A. Diddams (NIST) Frequency measurements of cold-atom clocks

Some other invited talks that might be of interest are

## Saturday, April 28

**Session B6**. DNP: Properties of Hadrons and Nuclei. Auditorium, Renaissance Hotel

10:45 Georg Bollen (National Superconducting Cyclotron Laboratory / Michigan State University) New mass determinations using a Penning trap

## Sunday, April 29

**Session H6**. FHP/DAMOP: 100 Years at NBS-NIST. Auditorium, Renaissance Hotel

11:57 Edwin Williams (NIST) A Century of Fundamental Constants Work at NBS-NIST

## Monday, April 30

**Session Q13**. DNP: Mini-Symposium: Ultracold Neutrons. Room 12-13, Renaissance Hotel

10:45 Steve Lamoreaux (Los Alamos National Laboratory-Physics Division) The Physics of Ultracold Neutrons and their Producion

## 2001 Pipkin Award Goes to Jens Gundlach

The Francis M. Pipkin Award was established by the Topical Group on Precision Measurement and Fundamental Constants to honor exceptional research accomplishments by a young scientist in the interdisciplinary area of precision measurement and fundamental constants and to encourage the wide dissemination of the results of that research. The award is given biennially every odd-number year and consists of \$2,000 plus support of travel expenses to the APS Meeting at which the award is conferred.

The winner of the 2001 Pipkin Award is Jens Gundlach of the University of Washington. Citation:

"For identifying, and providing a solution to, an unrecognized weakness in the Cavendish technique for measuring the gravitational constant G; improving the accuracy of G by an order of magnitude, representing one of the largest incremental increases in accuracy ever obtained in the history of such measurements."

Gundlach will speak at 14:30, Sunday, April 29, at the beginning of Session J9

Experimental Gravity and Gravitational Radiation. Room 2, Renaissance Hotel.

## **Membership Report**

The Topical Group membership is 408, a decrease from 431 in the previous year. The Topical Group has also decreased as a fraction of the total APS membership, from 1.01% to 0.98%. While this is not unusual (all but two Divisions and three Topical Groups decreased in both absolute and relative size) a continued decrease in size is not healthy for the Topical Group if it is to continue its activities of organizing meeting sessions, promoting members for APS Fellowship, etc. Membership dues are the main source of income to offset expenses such as the Newsletter. Please consider renewing your membership and even persuading colleagues who ought to be members to join.

# **Reminder:**Ballots Due April 6

Election ballots were mailed out in December. They must be received by April 6, 2001 to be counted. Remember that elections can be close. In one recent election, an Executive Committee position was decided by a single-vote margin.

# Nominations for Fellowship

Topical Group members are invited to nominate candidates for Fellowship in the APS. Our topical group is delegated the opportunity to select approximately two new APS Fellows from nominations submitted to the APS and designated as our topical group candidates. A description of the mechanism for submitting a nomination to the APS and nomination forms are available at <a href="http://www.aps.org/fellowship/index.html">http://www.aps.org/fellowship/index.html</a>. The deadline for submission of nominations for our unit is 2 April 2001. GPMFC nominations will be reviewed by the 2001 Fellowship Committee, which will be chaired by Blayne Heckel. Please notify Blayne Heckel, heckel@phys.washington.edu, of relevant nominations or intent to nominate someone.

# Topical Group to Meet with DAMOP in 2002

In 2002 the Topical Group will meet jointly with the Division of Atomic, Molecular, and Optical Physics (DAMOP). The current plan is to alternate between meeting jointly with DAMOP and participating in the April APS Meeting. The 2002 DAMOP Meeting will be held in Williamsburg, VA, May 29-June 1. The conference chair is John Delos.

# **Topical Group Business Meeting**

The Annual Business Meeting of the Topical Group will be held at 17:30 Sunday April 29 in Room 3 of the Renaissance Hotel. All members are encouraged to attend.

## **Current Topical Group Executive Committee**

#### Chair:

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