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Room: Grand Ballroom B

Session Chair: Scott Diddams, NIST

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S. MA, ECNU

A. M. Rey, JILA

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Room: Grand Ballroom C

Session Chair: Sheng-Shiang Li, National Tsing Hua University

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Session Chair: Warren Walls, US Naval Observatory

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Room: Poster Area 3

Session Chair: Svenja Knappe, NIST

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Monday, May 23:50 p.m. – 5:50 p.m.

Poster Session: Oscillatorsm Sensors and Transducers I

Room: Pacific Concourse - Area 4

Session Chair: Christine Klemenz Rivenbark, Krystal Engineering LLC

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Monday, May 23:50 p.m. – 5:50 p.m.

Poster Session: Timekeeping, Time and Frequency Transfer, GNSS Applications I

Room: Pacific Concourse - Area 5

Session Chair: Patrizia Tavella, INRIM

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Monday, May 23:50 p.m. – 5:50 p.m.

Poster Session: Optical Frequency Standards & Applications I

Room: Pacific Concourse - Area 6

Session Chair: Pierre Thomann, Université de Neuchâtel

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<i>Sung-Hoon Yang, Korea Research Institute of Standards and Science</i>	
<i>Tomonari Suzuyama, National Institute of Advanced Industrial Science and Technology</i>	
<i>Wen-Hung Tseng, Telecommunication Laboratories</i>	
<i>Li Huanxin, National Time Service Center</i>	
<i>Yuan Gao, National Institute of Metrology</i>	
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<i>Thomas Parker, NIST</i>	
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<i>Le Sun, National Time Service Center</i>	
<i>Wei Zhou, Xidian University</i>	
<i>Zhigang Li, National Time Service Center</i>	
<i>Hui Lei, National Time Service Center</i>	
<i>Baoqi Sun, National Time Service Center</i>	

Tuesday, May 3 3:50 p.m. – 5:50 p.m.

Poster Session: Optical Frequency Standards & Applications II

Room: Pacific Concourse - Area 6

Session Chair: Pierre Thomann, Université de Neuchâtel

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<i>Olivier Morizot, Université de Provence</i>	
<i>Gaëtan Hagel, Université de Provence</i>	
<i>D. Guyomarc'h, Université de Provence</i>	
<i>Marie Houssin, Université de Provence</i>	
<i>Martina Knoop, Université de Provence</i>	

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<i>Thomas Kessler, Physikalisch-Technische Bundesanstalt</i>	
<i>Christian Hagemann, Physikalisch-Technische Bundesanstalt</i>	
<i>Thomas Legero, Physikalisch-Technische Bundesanstalt</i>	
<i>Uwe Sterr, Physikalisch-Technische Bundesanstalt</i>	
<i>Fritz Riehle, Physikalisch-Technische Bundesanstalt</i>	
<i>Michael Martin, NIST</i>	
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<i>Mikko Merimaa, Centre for Metrology and Accreditation</i>	
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<i>Jingbiao Chen, Peking university</i>	
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<i>Gianni Di Domenico, Universite de Neuchatel</i>	
<i>Nikola Bucalovic, Universite de Neuchatel</i>	
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<i>Pierre Thomann, Universite de Neuchatel</i>	
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<i>Rob Thompson, California Institute of Technology</i>	
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<i>Ivan Gruidinin, California Institute of Technology</i>	
<i>Nan Yu, California Institute of Technology</i>	
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<i>Archita Hati, NIST</i>	
<i>Craig Nelson, NIST</i>	
<i>Dave Howe, NIST</i>	

A Flight-Like Optical Reference for GRACE Follow-on Laser Frequency Stabilization 729

William Folkner, California Institute of Technology
Glenn de Vine, California Institute of Technology
Stephan Esterhuizen, California Institute of Technology
William Klipstein, California Institute of Technology
Kirk McKenzie, California Institute of Technology
Daniel Shaddock, California Institute of Technology
Robert Spero, California Institute of Technology
Robert Thompson, California Institute of Technology
Danielle Wuchenich, California Institute of Technology
Nan Yu, California Institute of Technology
M. Stephens, Ball Aerospace and Technologies Corporation
J. Leitch, Ball Aerospace and Technologies Corporation
R. Peirce, Ball Aerospace and Technologies Corporation
T.T.-Y. Lam, Australian National University
A. Shaddock, Australian National University

Improvement in Accuracy of a Single $^{40}\text{Ca}^+$ Optical Clock towards 10^{-15} Level using a Magnetic Shield 732

Kensuke Matsubara, National Institute of Information and Communications Technology
Ying Li, National Institute of Information and Communications Technology
Shigeo Nagano, National Institute of Information and Communications Technology
Hiroyuki Ito, National Institute of Information and Communications Technology
Masatoshi Kajita, National Institute of Information and Communications Technology
Reiko Kojima, National Institute of Information and Communications Technology
Yuko Hanado, National Institute of Information and Communications Technology
Kazuhiro Hiyasaka, National Institute of Information and Communications Technology
Mizuhiko Hosokawa, National Institute of Information and Communications Technology

Design Considerations for a ^{87}Sr Optical Clock at VNIIFTRI 736

Sergey Slusarev, VNIIFTRI
Aleksey Kostin, VNIIFTRI
Vaycheslav Barychev, VNIIFTRI
Kseniya Khabarova, VNIIFTRI
Vitaly Pal'chikov, VNIIFTRI

Low Vibration Sensitivity Fiber Spools for Laser Stabilization 739

Tang Li, Shanghai Institute of Optics and Fine Mechanics
Adil Haboucha, LNE-SYRTE
Haifeng Jiang, LNE-SYRTE
Jean Laurent Dournaux, GEPI
Desire Kone, LNE-SYRTE
Craig Nelson, National Institute of Standards and Technology
Archita Hati, National Institute of Standards and Technology
Andre Clairon, LNE-SYRTE
Eric A. Burt, Jet Propulsion Laboratory
Pierre Lemonde, LNE-SYRTE
Giorgio Santarelli, LNE-SYRTE

Coherent detection of an active mode-locked terahertz quantum cascade laser 742

Giorgio Santarelli, LNE-SYRTE
Stefano Barbieri, MPQ/ Université Paris 7
M. Ravano, University of Leeds
Pierre Gellie, MPQ/ Université Paris 7
Christophe Manquest, MPQ/ Université Paris 7
Carlo Sirtori, MPQ/ Université Paris 7
Suraj Khanna, University of Leeds
Edmund Linfield, University of Leeds
Giles Davies, University of Leeds

Wednesday, May 4

8:30 a.m. – 10:30 a.m.

Session: Optimized and Tunable MEMS Resonators

Room: Grand Ballroom C

Session Chair: Yoonkee Kim, US Army

3.2 GHz AIN Lateral Overmoded Bulk Acoustic Wave Resonators with a f Q of 1.17×10^{13} 744

Songbin Gong, University of Pennsylvania

Nai-Kuei Kuo, University of Pennsylvania

Gianluca Piazza, University of Pennsylvania

Tunable Silicon Bulk Acoustic Resonators with Multi-Face AIN Transduction 749

Roozbeh Tabrizian, Georgia Institute of Technology

Farrokh Ayazi, Georgia Institute of Technology

Voltage-Controlled Tuning to Optimize MEMS Resonator Array-Composite Resonator Output Power 753

Mehmet Akgul, University of California at Berkeley

Zeying Ren, University of California at Berkeley

Clark Nguyen, University of California at Berkeley

***Student Paper Competition Paper**

Acoustic Bragg Reflectors for Q-Enhancement of Unreleased MEMS Resonators..... 759

Wentao Wang, MIT

Dana Weinstein, MIT

Tunable Piezoelectric MEMS Resonators for Real-Time Clock..... 765

Diego Emilio Serrano, Georgia Institute of Technology

Roozbeh Tabrizian, Georgia Institute of Technology

Farrokh Ayazi, Georgia Institute of Technology

***Student Paper Competition Paper**

Linear Acoustic Bandgap Arrays for Spurious Mode Suppression in Piezoelectric MEMS Resonators..... 769

Logan Sorenson, Georgia Institute of Technology

Jenna Fu, Georgia Institute of Technology

Farrokh Ayazi, Georgia Institute of Technology

Wednesday, May 4

8:30 a.m. – 10:30 a.m.

Session: Celebrating Kalman Filter 50th Anniversary

Room: Seacliff Rooms

Session Chair: Demetrios Matsakis, USNO

Reduced Kalman Filters for Clock Ensembles 774

Charles Greenhall, California Institute of Technology

A Kalman Filter UTC(k) prediction and steering algorithm 779

John Davis, National Physical Laboratory

Setnam Shemar, National Physical Laboratory

Peter Whibberley, National Physical Laboratory

Synchronizing Computer Clocks using Kalman Filters..... 785

Judah Levine, NIST

Using the Kalman filter to detect time and frequency jumps in atomic clocks..... 791

Lorenzo Galleani, Politecnico di Torino

Patrizia Tavella, INRIM

Wednesday, May 4

10:50 a.m. – 12:30 p.m.

Session: Microclocks & Novel Concepts

Room: Grand Ballroom B

Session Chair: John Kitching, NIST

Dark Line Resonances in Cs-Ne microcells for Chip Scale Atomic Clocks 794

Rodolphe Boudot, FEMTO-ST

Piotr Dziuban, FEMTO-ST

Madoka Hasegawa, FEMTO-ST

Ravinder Chutani, FEMTO-ST

Serge Galliou, FEMTO-ST

Vincent Giordano, FEMTO-ST

Christophe Gorecki, FEMTO-ST

All-Optical Integrated Rubidium Atomic Clock 799

Lute Maleki, OEwaves Inc

Anatoliy Savchenkov, OEwaves Inc

Vladimir Ilchenko, OEwaves Inc

Wei Liang, OEwaves Inc

David Seidel, OEwaves Inc

Andrey Matsko, OEwaves Inc

Natan Wells, The Aerospace Corp

James Camparo, The Aerospace Corp

Bernardo Jaduszliwer, The Aerospace Corp

Low-power chip-scale Rubidium Plasma Light Source for Miniature Atomic Clocks 804

Vinu Venkatraman, École Polytechnique Fédérale de Lausanne

Yves Pétremand, École Polytechnique Fédérale de Lausanne

Christoph Affolderbach, University of Neuchâtel

Gaetano Mileti, University of Neuchâtel

Nico de Rooij, École Polytechnique Fédérale de Lausanne

Herbert Shea, École Polytechnique Fédérale de Lausanne

***Student Paper Competition Paper**

MOT Loading Enhancement with Stimulated Light Forces 808

Tara Liebisch, NIST

Eric Blanshan, NIST

Elizabeth Donley, NIST

John Kitching, NIST

CPT pump-probe measurement of the Cs clock transition DC Stark shift 811

Jean-Luc Robyr, University of Fribourg

Paul Knowles, University of Fribourg

Antoine Weis, University of Fribourg

***Student Paper Competition Paper**

Wednesday, May 4

10:50 a.m. – 12:30 p.m.

Session: Quartz Based Resonators

Room: Grand Ballroom C

Session Chair: Ji Wang, Ningbo University

An Efficient AT-Cut Quartz Crystal Resonator Design Tool for Activity Dip in Working Temperature Range..... 815

Shih-Yung Pao, TXC Corporation

Qiao-Qiao Pan, TXC(Ningbo) Corporation

M.K. Chao, TXC(Ningbo) Corporation

Recent Investigations on BAW Resonators at Cryogenic Temperatures..... 819

Maxim Goryachev, FEMTO-ST

Serge Galliou, FEMTO-ST

Joël Imbaud, FEMTO-ST

Roger Bourquin, FEMTO-ST

Philippe Abbe, FEMTO-ST

Nonlinearities for Parametric Pumping of Quartz UHF Oscillators 825

Randall Kubena, HRL Laboratories

Yook-Kong Yong, Rutgers University

Debbie Kirby, HRL Laboratories

R.J. Joyce, HRL Laboratories

Collective Fabrication of 20 MHz Resonators by Deep Reactive Ion Etching on 3" Quartz Wafers 832

Jean-Jacques Boy, FEMTO-ST

Herve Tavernier, FEMTO-ST

Xavier Vacheret, FEMTO-ST

Alexandre Clairet, FEMTO-ST

Thierry Laroche, FEMTO-ST

Quartz Crystal Industry of China in the Crossroads 837

Ji Wang, Ningbo University

Liansheng Jiang, Piezoelectric Crystal Association of China

Min-Chiang Chao, TXC (Ningbo) Corporation

Xuming Chi, Zhejiang East Crystal Electronic Co., Ltd.

Jianwei Hu, Ningbo Hiking Electronics Tech. Co., Ltd.

Zhuzhi Ye, Timemaker Crystal Technology Co., Ltd.

Lihu Pan, 203 Institute of the Second Academy

Weiqiu Chen, Zhejiang University

Wednesday, May 4

10:50 a.m. – 12:30 p.m.

Session: Algorithms for Clock and Time Scale Estimations

Room: Seacliff Rooms

Session Chair: Ilaria Sesia, INRIM

Straightforward estimations of GNSS on-board clocks..... 841

Jerome Delporte, CNES

Cyrille Boulanger, CNES

Flavien Mercier, CNES

Statistical biases and very long term time stability analysis 845

Francois Vernotte, University of Franche-Comte

Eric Lantz, University of Franche-Comte

A new prediction algorithm for EAL..... 850
Gianna Panfilo, International Bureau for Weights and Measures
Aurelie Harmegnies, International Bureau for Weights and Measures
Laurent Tisserand, International Bureau for Weights and Measures

**Performance Comparison of Composite Clock Algorithms Based on Future
GPS Clock Scenarios..... 856**
Matthias Suess, DLR
Demetrios Matsakis, USNO

Wednesday, May 4 1:50 p.m.-3:50 p.m.

Session: Lattice Clocks II
Room: Grand Ballroom B
Session Chair: Ekkehard Peik, PTB

INVITED: Suppression of collisional frequency shifts in an optical lattice clock 862
Matthew Swallows, NIST
Michael Bishof, NIST
Yige Lin, NIST
Sebastian Blatt, NIST
Michael Martin, NIST
Ana Maria Rey, NIST
Jun Ye, NIST

Evidence of a fermionic collisional shift 863
Wilfried Maineult, LNE-SYRTE
Christian Deutsch, Laboratoire Kastler Brossel
Jakob Reichel, Laboratoire Kastler Brossel
Kurt Gibble, The Pennsylvania State University
Peter Rosenbusch, LNE-SYRTE

Wednesday, May 4 1:50 p.m.-3:50 p.m.

Session: Physical Sensors
Room: Grand Ballroom C
Session Chair: Don Malocha, University of Central Florida

Ultrasonic Microparticle Trapping by Multi-Foci Fresnel Lens 864
Youngki Choe, University of Southern California
Jonathan Kim, Palos Verdes Peninsular High School
Koping Kirk Shung, University of Southern California
Eun Sok Kim, University of Southern California

Ex Vivo Monitoring of Rat Heart Wall Motion Using Piezoelectric Cantilevers 868
Rui Zhang, Case Western Reserve University
Wen Ko, Case Western Reserve University
Xin Yu, Case Western Reserve University
David Rosenbaum, Case Western Reserve University
Philip Feng, Case Western Reserve University

Influence of non-ideal clamping in microcantilever resonant frequency estimation 874
Ludivine Fadel-Taris, Université de Bordeaux
Cédric Ayela, Université de Bordeaux
Fabien Josse, Marquette University Milwaukee
Stephen. M Heinrich, Marquette University Milwaukee
Oliver Brand, Georgia Institute of Technology Atlanta
Daysuke Saya, CNRS, LAAS Laboratory
Isabelle Dufour, Université de Bordeaux

Wednesday, May 4

1:50 p.m.-3:50 p.m.

Session: Acoustic Oscillators and Micromechanical Resonators

Room: Seacliff Rooms

Session Chair: Michael Driscoll, Northrop Grumman

RF oscillators stabilized by temperature compensated HBARs based on LiNbO₃/Quartz Combination..... 879

Thomas Baron, FEMTO-ST

Gilles Martin, FEMTO-ST

Eric Lebrasseur, FEMTO-ST

Dorian Gachon, Université de Perpignan Via Domitia

Pierre-Patrick Lassagne, CEA-LETI

Alexandre Reinhardt, CEA-LETI

Luc Chommeloux, TEMIS Innovation

Sylvain Ballandras, FEMTO-ST

Passive Tuning in Lateral-Mode Thin-Film Piezoelectric Oscillators 883

Mohsen Shahmohammadi, Oklahoma State University

Derya Dikbas, Oklahoma State University

Brandon Harrington, Oklahoma State University

Reza Abdolvand, Oklahoma State University

***Student Paper Competetion Paper**

High Frequency Dual-Mode Thermal-Piezoresistive Oscillators 888

Amir Rahafrooz, University of Denver

Siavash Pourkamali, University of Denver

Wafer-scale packaging for FBAR-based Oscillators 892

Martha Small, Avago Technologies

Richard Ruby, Avago Technologies

Steven Ortiz, Avago Technologies

Reed Parker, Avago Technologies

Fan Zhang, University of Washington

Jianlei Shi, University of Washington

Brian Otis, University of Washington

Low Phase Noise Quartz BAW Oscillator for Space Applications..... 896

T. McClelland, Frequency Electronics, Inc.

J. Zacharski, Frequency Electronics, Inc.

C. Szekely, Frequency Electronics, Inc.

E. Mauskop, Frequency Electronics, Inc.

D. Bogomolov, Frequency Electronics, Inc.

Wednesday, May 4

4:10 p.m.-6:10 p.m.

Session: Space Clocks & Novel Oscillators

Room: Grand Ballroom B

Session Chair: Louis Marmet, NRC Canada

Study of Fe³⁺-Sapphire Maser Above 4 K..... 901

Karim Benmessai, University of Western Australia
Daniel Lloyd Creedon, University of Western Australia
Jean-Michel Le-Floch, University of Western Australia
Michael Edmund Tobar, University of Western Australia
Mohamad Mrad, FEMTO-ST
Pierre-Yves Bourgeois, FEMTO-ST
Yann Kersale, FEMTO-ST
Vincent Giordano, FEMTO-ST

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Marco Belloni, Selex Galileo
Marina Gioia, Selex Galileo
Simone Beretta, Selex Galileo
Fabien Droz, Spectratime
Pierre Mosset, Spectratime
Pierre Waller, European Space Agency
Giovanni Busca, Kyttime

Dick effect and cavity pulling on HORACE compact cold atom clock..... 911

Nicolas Rossetto, LNE-SYRTE
F.X. Esnault, NIST
David Holleville, LNE-SYRTE
J. Delporte, CNES
N. Dimarcq, LNE-SYRTE

Photonicly generated 10 GHz microwaves with close-to-carrier phase noise < -100 dBc/Hz 915

Tara Fortier, NIST
M.S. Kirchner, NIST
F. Quinlan, NIST
J.A. Taylor, NIST
J.C. Bergquist, NIST
T. Rosenband, NIST
N. Lemke, NIST
A. Ludlow, NIST
Y. Jiang, NIST
C.W. Oates, NIST
S.A. Diddams, NIST

Wednesday, May 4 **4:10 p.m.-6:10 p.m.**

Session: Mass Sensors
Room: Grand Ballroom C
Session Chair: Leo Reindl, University of Freiburg

High Frequency Thermal-Piezoresistive MEMS Resonators for Detection of Organic Gases 917

Arash Hajjam, University of Denver
Andrew Logan, University of Denver
Jagadeesh Pandiyan, University of Denver
Siavash Pourkamali, University of Denver

Receptor-Coated Porous Silicon Resonators for Enhanced Sensitivity of Vapor Detection..... 922

Yongha Hwang, University of California, Los Angeles
Sungmin Kim, University of California, Los Angeles
Rob Candler, University of California, Los Angeles

Effect of a mass layer on SH Waves in Piezomagnetic/Piezoelectric Material Structures..... 926

Jing Cui, Ningbo University
Jianke Du, Ningbo University
Ji Wang, Ningbo University

Wednesday, May 4 **4:10 p.m.-6:10 p.m.**

Session: Optical Fiber Time and Frequency Transfer
Room: Seacliff Rooms
Session Chair: Jan Johansson, SP

Progress on an Optical Link for Ultra-Stable Frequency Dissemination using a Public Telecommunication Network 930

Olivier Lopez, Laboratoire de Physique des Lasers
Adil Haboucha, LNE-SYRTE
Bruno Chanteau, Laboratoire de Physique des Lasers
Vincent Roncin, Laboratoire de Physique des Lasers
Christian Chardonnet, Laboratoire de Physique des Lasers
Anne Amy-Klein, Laboratoire de Physique des Lasers
Giorgio Santarelli, LNE-SYRTE

Active Detection of Propagation Delay Variations in Single Way Time Transfer Utilizing Dual Wavelengths in an Optical Fiber Network 933

Sven-Christian Ebenhag, SP Technical Research Institute of Sweden
Per Olof Hedekvist, SP Technical Research Institute of Sweden
Kenneth Jaldehag, SP Technical Research Institute of Sweden

One-Way Temperature Compensated Fiber Link..... 939

James Hanssen, US Naval Observatory
Scott Crane, US Naval Observatory
Christopher Ekstrom, US Naval Observatory

Thursday, May 5 **8:30 a.m.-10:30 a.m.**

Session: Vapor Cell Clocks
Room: Grand Ballroom B
Session Chair: Svenja Knappe, NIST

A compact laser-pumped Rb clock with $< 5 \times 10^{-13} \tau^{-1/2}$ frequency stability..... 944

Christoph Affolderbach, University of Neuchatel
Florian Gruet, University of Neuchatel
Renaud Matthey, University of Neuchatel
Gaetano Mileti, University of Neuchatel

Pulsed Optically Pumped Rb Clock with High Frequency Stability Performances 947

Salvatore Micalizio, INRIM
Aldo Godone, INRIM
Claudio Calosso, INRIM
Filippo Levi, INRIM
Florian Gruet, Laboratoire Temps Fréquence
Christoph Affolderbach, Laboratoire Temps Fréquence

The Influence of Laser Polarization Noise on CPT Atomic Clock Signals 951

James Camparo, The Aerospace Corporation
Michael Huang, The Aerospace Corporation

Thursday, May 5 8:30 a.m.-10:30 a.m.

Session: Filters

Room: Grand Ballroom C

Session Chair: Rick Puccio, Quartzdyne

INVITED: Positioning FBAR Technology in the Frequency and Timing Domain 955

Rich Ruby, Wireless Semiconductor Division

INVITED: Tunable RF SAW/BAW Filters: Dream or Reality? 965

Ken-Ya Hashimoto, Chiba University
Shuji Tanaka, Tohoku University
Masayoshi Esashi, Tohoku University

Cascaded Channel-Select Filter Array Architecture Using High-K Transducers for Spectrum Analysis 973

Eugene Hwang, Cornell University
Ronald Polcawich, U.S. Army Research Laboratory
Tanay Gosavi, Cornell University
Jeffrey Pulskamp, U.S. Army Research Laboratory
Sunil Bhave, Cornell University
Sarah Bedair, U.S. Army Research Laboratory

Laterally Coupled Narrow-Band High Overtone Bulk Wave Filters Using Thinned Single Crystal Lithium Niobate Layers 979

Dorian Gachon, PROMES
Thomas Baron, FEMTO-ST
Gilles Martin, FEMTO-ST
Eric Lebrasseur, FEMTO-ST
Emilie Courjon, FEMTO-ST
Florent Bassignot, FEMTO-ST
Sylvain Ballandras, FEMTO-ST

Thursday, May 5

8:30 a.m.-10:30 a.m.

Session: Optical Oscillators & Components

Room: Seacliff Rooms

Session Chair: Michael Tobar, University of Western Australia

Experimental Demonstration of Phase-Modulated Optoelectronic Oscillator Using

Balance Detection 984

Patrick Callahan, Johns Hopkins University Applied Physics Laboratory

Michael Dennis, Johns Hopkins University Applied Physics Laboratory

Thomas Clark, Johns Hopkins University Applied Physics Laboratory

Characterization of Surface Acoustic Wave Optomechanical Oscillators..... 988

Gaurav Bahl, University of Michigan

John Zehnpfennig, University of Michigan

Matthew Tomes, University of Michigan

Tal Carmon, University of Michigan

New strategies for fiber-based femtosecond lasers low-noise microwave generation..... 992

Wei Zhang, LNE-SYRTE

Adil Haboucha, LNE-SYRTE

Tang Li, LNE-SYRTE

Andre Luiten, University of Western Australia

Ronald Holzwarth, MenloSystems GmbH

Michel Lours, LNE-SYRTE

Yann Le Coq, LNE-SYRTE

Giorgio Santarelli, LNE-SYRTE

S. Seidelin, Universite Joseph Fourier

Optical Scattering Induced Noise in RF-Photonic Systems 994

Olukayode Okusaga, U.S. Army Research Laboratory

James Cahill, University of Maryland Baltimore County

Andrew Docherty, University of Maryland Baltimore County

Weimin Zhou, U.S. Army Research Laboratory

Gary Carter, University of Maryland Baltimore County

Curtis Menyuk, University of Maryland Baltimore County

Theoretical Investigation of Optical Fiber-Length-Dependent Phase Noise in

Opto-Electronic Oscillators..... 1000

Andrew Docherty, University of Maryland Baltimore County

Olukayode Okusaga, U.S. Army Research Laboratory

Curtis Menyuk, University of Maryland Baltimore County

Weimin Zhou, U.S. Army Research Laboratory

Gary Carter, University of Maryland Baltimore County

Generation of Kerr Combs in MgF₂ and CaF₂ Microresonators 1006

Wei Liang, OEwaves Inc

Lute Maleki, OEwaves Inc

Vladimir Ilchenko, OEwaves Inc

Anatoliy Savchenkov, OEwaves Inc

David Seidel, OEwaves Inc

Andrey Matsko, OEwaves Inc

Thursday, May 5

10:50 a.m.-12:50 p.m.

Session: Fundamental Measurement & Sensors

Room: Grand Ballroom B

Session Chair: Giorgio Santarelli, LNE-SYTRE

Testing the gravitational redshift with atomic clocks and atomic gravimeters? 1012

Peter Wolf, LNE-SYTRE

Luc Blanchet, GRECO

Christian J. Bordé, LNE-SYRTE

Serge Reynaud, LKB

Christophe Salomon, LKB

Claude Cohen-Tannoudji, LKB

Continous g monitoring with atom interferometry 1017

Sébastien Merlet, LNE-SYRTE

Tristan Farah, LNE-SYRTE

Anne Louchet-Chauvet, LNE-SYRTE

Arnaud Landragin, LNE-SYRTE

Franck Pereira Dos Santos, LNE-SYRTE

Andre Clarion, LNE-SYRTE

Thursday, May 5

10:50 a.m.-12:50 p.m.

Session: Materials

Room: Grand Ballroom C

Session Chair: Bernard Dulmet, ENS2M

**INVITED: GaN: a multifunctional material enabling MEMS resonators based on a
mplified piezoelectric detection 1021**

Marc Faucher, IEMN

Achraf Ben Amar, IEMN

Bertrand Grimbert, IEMN

Virginie Brandli, IEMN

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Matthieu Werquin, MC2-technologies

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