

## PUBLICATIONS

1. Electrical Water Flow Monitor, J. Levine, Rev. Sci. Instr., 36, 105 (1965).
2. Metastable Rare Gas Polarizabilities, E. J. Robinson, J. Levine, and B. Bederson, Phys. Rev. 146, 95 (1966).
3. Measurement of the Electric Dipole Polarizabilities of Metastable Mercury, J. Levine, R. J. Celotta and B. Bederson, Phys. Rev. 171, 31 (1968).
4. Analysis of Data from a Laser Strainmeter using Fast Fourier Transforms, in Laser Applications in the Geosciences, Judah Levine, J. Gauger, and F. F. Hall, Editors, McDonnell Douglas Corp., pp. 227-45 (1970).
5. Absolute Strain Measurements with a 30-Meter Interferometer, Judah Levine, H. S. Boyne, J. L. Hall, R. L. Barger, P. L. Bender, J. Ward, and J. Faller, Laser Applications in the Geosciences, J. Gauger and F. F. Hall, Editors, McDonnell Douglas Corp., pp. 215-25 (1970).
6. Design and Operation of a Methane Absorption Stabilized Laser Strainmeter, Judah Levine, J. Geophys. Res. 77, 2595 (1972).
7. Design and Operation of a Methane Absorption Stabilized Laser Strainmeter, Judah Levine, Proc. of Seminar on Frequency Standards and Metrology, Universite Laval, Quebec, 1971.
8. Upper Limit on the Gravitational Flux Reaching the Earth from the Crab Pulsar, Judah Levine and R. Stebbins, Phys. Rev., D5, 1465 (1972).
9. Molecular Photodetachment Spectrometry, I. The Electron Affinity of Nitric Oxide and the Molecular Constants of NO-, M. W. Siegel, R. J. Celotta, Judah Levine and J. L. Hall, Phys. Rev., A6, 607, (1972).
10. Molecular Photodetachment Spectrometry, II. The Electron Affinity of O<sub>2</sub> and the Structure of O<sub>2</sub>-, R. J. Celotta, R. A. Bennet, Judah Levine, J. L. Hall and M. W. Siegel, Phys. Rev. A6, 631 (1972).
11. Ultra-Sensitive Laser Interferometers and their Application to Problems of Geophysical Interest, Judah Levine, Phil. Trans. Roy. Soc. London, A274, 279 (1973).
12. Geophysics, 1973 Yearbook of the McGraw-Hill Encyclopedia of Science and Technology, Judah Levine, McGraw-Hill, New York, 1973, pp. 215 ff.
13. Experiments of Astrophysical Significance using a Laser Strainmeter, Judah Levine, Proc. of the Conference on Laser Spectroscopy, Vail, Colorado, 6/73, Edited by R. G. Brewer and A. Mooradian, Plenum Press, 1974, pp. 643-52.

14. The Spectrum of the Earth Strain from 10-8 to 10+2 Hz. Jon Berger and Judah Levine, J. Geophys. Res. 79, 1210 (1974).
15. Comments on the Review of Strainmeter Technology by P. H. Sydenham, Judah Levine, Nature, 257, 513, (1975).
16. Earth Tide Measurements in the Poorman Mine near Boulder, Colorado, Judah Levine and J. C. Harrison, J. Geophys. Res., 81, 2543 (1976).
17. The Measurement of the Positions of Points on the Earth's Surface using an Absolute Gravimeter and a Multiwavelength Geodimeter as complements to Extra-Terrestrial Techniques, J. E. Faller and Judah Levine Proc. SALUR Symposium, Austin, Texas, 6/76, pp. 277-83.
18. Laser Distance Measurement, Judah Levine, Annual Review of Earth and Planetary Sciences, 5, 357-69 (1977).
19. Frequency Stability and Stabilization of a Chemical Laser, J. Munch, Judah Levine and M. A. Kolpin, IEEE J. Quant. Electron., QE14, 17-22 (1978).
20. Strain Tide Spectroscopy, Judah Levine, Geophys. J. Roy. Astro. Soc. 54, 27-41 (1978).
21. Strain Tide Spectroscopy and the Nearly Diurnal Resonance of the Earth, Judah Levine, Proc. 8th Intl. Conference on the Earth Tides, 19-24 Sept. 1977, Edited by M. Bonatz and P. Melchior, pp. 473-85.
22. Possible High Mobility LAGEOS Ranging Station, P. L. Bender, J. E. Faller Judah Levine and S. E. Moody, Proc. of the Symposium on Recent Crustal Movements, TECTONOPHYSICS, 52, 69-73 (1979).
23. Design of an Extended Range Three Wavelength Distance Measuring Instrument, S. E. Moody and Judah Levine Proc. Symposium on Recent Crustal Movements, TECTONOPHYSICS, 52, 77-82 (1979).
24. Multiple Wavelength Geodesy, Proc. 9th GEOP Conference, Ohio State University, Judah Levine, 1978, pp. 99-102.
25. Observation of the Nearly Diurnal Resonance of the Earth Using a Laser Strainmeter, Judah Levine, Proc. 9th GEOP Conference, Ohio State University, 1978, pp. 333-336.
26. Design of a Deep Borehole Tiltmeter C. M. Meertens, Judah Levine and J. C. Harrison, Proc. 9-th International Symposium on Earth Tides, New York, 1981, pp. 273-281. Published by E. Schweizerbart'sche Verlagsbuchhandlung, D-7000 Stuttgart, FRG, 1983.
27. Performance of a Deep Borehole Tiltmeter, Judah Levine, Proc. 9-th International

Symposium on Earth Tides, New York, 1981, pp. 47-57. Published by E. Schweizerbart'sche Verlagsbuchhandlung, D-7000 Stuttgart, FRG, 1983.

28. The Earth Tides, Judah Levine, *The Physics Teacher*, 12/82, pp. 588-595.

29. Automatic High-Accuracy Phase Measurement System, S. Stein, Judah Levine, D. Glaze, J. Gray, D. Hilliard, D. Howe, *IEEE Trans. on Instr. and Meas.*, IM-32, 227 - 231 (1983).

30. Performance of an Automated High Accuracy Phase Measurement System, S. R. Stein, D. J. Glaze, Judah Levine, J. E. Gray, D. Hilliard, D. A. Howe and L. A. Erb, *Proc. 1982 Frequency Control Symposium*, pages 314-320, 1983.

31. Recent Improvements in the atomic time scale of the National Bureau of Standards, D. W. Allan, D. J. Glaza, J. E. Gray, R. H. Jones, Judah Levine and S. R. Stein, *Proc. Precise Time and Time Interval Applications and Planning Meeting*, pages 29-40, 1983.

32. Multiple Wavelength Electromagnetic Distance Measurements, Judah Levine, *Geodetic Refraction*, Edited by F. K. Brunner, Springer Verlag, 1984, pp. 45 - 51.

33. Geodesy, A Look to the Future, Byron Tapley, MacDonald Barr, Charles C. Counselman III, Judah Levine, Karen McNally, Marcia McNutt, B. K. Meade, Richard J. Mitchell, Richard H. Rapp, Fred N. Spiess, Petr Vanicek, James H. Whitcomb and Owen W. Williams, *Committee on Geodesy Report*, National Academy Press, 1985.

34. Recovering Files From A Damaged Files-11 Disk, Judah Levine, *RSX Multitasker*, Digital Equipment User Society, July, 1985, pp. 19 - 30.

34. *Methods of Experimental Physics*, Vol. 22, edited by R. J. Celotta and Judah Levine, New York, Academic Press, 1985.

35. Gravity Tide Measurements with a Feedback Gravity Meter, Judah Levine, J. C. Harrison and Warren Dewhurst, *J. Geophys. Res.*, 91, 12835 - 41, (1986).

36. Automatically Running Command Files at any Future Time, Judah Levine, *RSX Multitasker*, Digital Equipment User Society, December 1986, pp. 6 - 10.

37. Tilt Observations in Colorado and Wyoming using Borehole Tiltmeters I: Analysis of Tidal and Secular Tilt, Judah Levine, Charles Meertens and Robert Busby, *J. Geophys. Res.*, 94, 574 - 86 (1989).

38. Tilt Observations in Colorado and Wyoming using Borehole Tiltmeters II: Analysis of Data from Yellowstone National Park, Charles Meertens, Judah Levine and Robert Busby, *J. Geophys. Res.*, 94, 587 - 601 (1989).

39. On Some Peculiarities of the Earthquake Registration by an Inertia-less Seismometer, Judah Levine, V. T. Levshenko and A. M. Sadovskii, Doklady Academica Nauk CCCP, 300, 326 - 8, 1988.
40. The Steering of a Real Time Clock to UTC(NBS) and to UTC, Judah Levine and D. W. Allan, Proceedings of the Third International Symposium on Time Scale Algorithms, September, 1988, Turino, Italy, 239 - 254.
41. The NIST Automated Computer Time Service, J. Levine, M. Weiss, D. D. Davis, D. W. Allan and D. B. Sullivan, Journal of Res. of NIST, 94, 311 - 321 (1989).
42. Measurements of Tilt Using a Borehole Tiltmeter, Judah Levine, Proceedings of Sensors Expo International, Cleveland, Ohio, September 1989, pp. 103B1 - 103B7.
43. The NIST Digital Time Service, J. Levine, M. Weiss, D. D. Davis, D. W. Allan and D. B. Sullivan, Proceedings of the Precise Time and Time Interval Applications and Planning Meeting, Redondo Beach, California, 1989, 181-190.
44. Synchronizing Computer Clocks Using A Local Area Network, J. Levine, Proceedings of the Precise Time and Time Interval Applications Meeting, 1990, NASA Conference Publication 3116, 409-414.
45. A Rubidium Frequency Standard and a GPS Receiver Remotely Steered Clock System with Good Short-Term and Long-Term Stability, D. W. Allan and Judah Levine, Proceedings of the Symposium on Frequency Control, Baltimore, Maryland, 1990, pp. 151-160, published by the IEEE, New York, 1991, Catalog 90CH2818-3.
46. New Inexpensive Frequency Calibration Service from NIST, D. W. Allan, D. D. Davis, Judah Levine, M. A. Weiss, N. Hironaka and D. Okayama, Proceedings of the Symposium on Frequency Control, Baltimore, Maryland, June, 1990, pp. 107-116, published by the IEEE, New York, 1991, Catalog 90CH2818-3.
47. Time Generation and Distribution, D. B. Sullivan and J. Levine, Proceedings of the IEEE, 79, 906-914, 1991.
48. Measurement Methods and Algorithms for Comparison of Local and Remote clocks, Proceedings Precise Time and Time Interval Planning Meeting, Judah Levine, December 1992, 277-288, NASA Document CP-3218.
49. Smart Clock: A New Time, Marc A. Weiss, David W. Allan, Dick D. Davis and Judah Levine, IEEE Transactions on Instrumentation and Measurement, 41, 915-918, 1992.
50. Measuring Low Frequency Tilts, Mary Kohl and Judah Levine, J. of Research of NIST, 98, 191-202, 1993.

51. An Algorithm to Synchronize the Time of a Computer to Universal Time, Judah Levine, IEEE/ACM Transactions on Networking, 3, 42-50, 1995.
52. The Future of Time and Frequency Dissemination, Judah Levine, Proceedings of the 25th Precise Time and Time Interval Planning Meeting, December 1993, NASA Document CP-3267, pp. 573-580.
53. The NIST Internet Time Service, Judah Levine, Proceedings of the 25th Precise Time and Time Interval Planning Meeting, December 1993, NASA Document CP-3267, pp. 504-514.
54. Measurement and Interpretation of Tidal Tilts in a Small Array, Mary L. Kohl and Judah Levine, J. Geophys. Res., 100, 3929-2941, 1995.
55. Analytical Estimation of Carrier Multipath Bias on GPS Position Measurements, C. Michael Volk and Judah Levine, NIST Technical Note 1366, Washington, D. C., US Government Printing Office, April, 1994.
56. Measuring Low Frequency Vibrations, Judah Levine, Proc. of SPIE, 2264, pp. 160-169, 1994.
57. Methods of Distributing Time and Frequency: A Review, Judah Levine, Reviews of Radio Science, 1993-1996, ed. by W. Ross Stone, New York, Oxford Univ. Press, 1996, ch. 4.
58. UTC Dissemination to the Real-Time User, Judah Levine, Proc. of the 27th Precise Time and Time Interval Planning and Applications Meeting, December, 1995, NASA Document CP-3334, pp.103-109.
59. Authentication, Time-Stamping and Digital Signatures, Judah Levine, Proc. of the 27th Precise Time and Time Interval Planning and Applications Meeting, December, 1995, NASA Document CP-3334, pp. 439-445.
60. Precise Synchronization of Computer Network Clocks, Judah Levine, Encyclopedia of Computer Science and Technology, Edited by Allen Kent and James G. Williams, Vol. 37, Supplement 22, pp. 281-306, 1997: New York: Marcel Dekker, Inc.
61. Recent Improvements in the Performance of the NIST AT1 Time Scale, Thomas E. Parker and Judah Levine, Proc. 50th Frequency Control Symposium, 1996, IEEE, Catalog Number 96CH35935, 1131-1136.
62. Incorporating Data from a Primary Frequency Standard into a Time Scale, Judah Levine, Proc. of 50th Frequency Control Symposium, 1996, IEEE, Catalog Number 96CH35935, 1137-1145.

63. Time and Frequency Metrology, D. B. Sullivan and Judah Levine, Proc. MQGT Conference, 1996, pages 289-296.
64. Two-Way Time and Frequency Transfer in Sonet, M. A. Weiss, S. R. Jefferts, J. Levine, S. Dilla and T. E. Parker, Proc. of 50th Frequency Control Symposium, 1996, IEEE, Catalog Number 96CH35935, 1163-1168.
65. Two-way time transfer through SDH and Sonet, S. R. Jefferts, M. A. Weiss, Judah Levine and S. Dilla, Proc. 1996 European Time and Frequency Forum, Pages 461-464, 1997.
66. Incorporating Data from a Primary Frequency Standard into a Time Scale, Judah Levine, IEEE Trans. Ultrasonics, Ferroelectrics and Frequency Control, 44, 629-636, (1997).
67. Time and Frequency Activities at NIST, J. Levine and D. B. Sullivan, Proc. of the 28th Precise Time and Time Interval Planning and Applications Meeting, December, 1996, pp. 75-83, Washington, D.C.: US Naval Observatory, 1997.
68. Two-Way Time and Frequency Transfer Using Optical Fibers, S. Jefferts, M. Weiss, Judah Levine, S. Dilla, E. W. Bell and T. E. Parker, IEEE Trans. on Instr. and Meas., 46, 1-4, 1997.
69. Comment on Simulations: Why experimentalists mistrust computer modeling – and why they rely on it, Judah Levine, Computers in Physics, 11, 125 (1997).
70. Principles of Internet Time Synchronization, Kenneth W. Monington and Judah Levine, Proc. of 51st Frequency Control Symposium, 1997, IEEE, Catalog Number 97CH36016, pp. 395-403.
71. Time Synchronization using the Internet, Judah Levine, IEEE Trans. on Ultrasonics, Ferroelectrics and Frequency Control, 45, 450-460, 1998.
72. Impact of New High Stability Frequency Standards on the Performance of the NIST AT1 Time Scale, T. E. Parker and Judah Levine, IEEE Trans. on Ultrasonics, Ferroelectrics and Frequency Control, 44, 1239-44, 1997.
73. Time Transfer Using GPS Carrier Phase Methods, Kristine M. Larson and Judah Levine, Proc. 29th Precise Time and Time Interval Systems and Applications Meeting, 1997, 221-228, Washington, D.C. US Naval Observatory, 1998.
74. Time Rollover Events and Leap Seconds, Judah Levine, Proc. 29th Precise Time and Time Interval Systems and Applications Meeting, 1997, 399-403, Washington, D.C. US Naval Observatory, 1998.
75. Time Transfer Using the Phase of the GPS Carrier, Kristine Larson and Judah Levine, IEEE Trans. UFFC, Vol. 45, 539-540, 1998.

76. Time Synchronization over the Internet using an Adaptive Frequency Locked Loop, Judah Levine, IEEE Trans. UFFC, Vol. 46, pages 888-896, 1999.
77. Time Transfer using Multi-channel GPS Receivers, Judah Levine, IEEE Trans. UFFC, Vol. 46, pp. 392-398, 1999.
78. Time Transfer using the Phase of the GPS Carrier, Kristine Larson and Judah Levine, Proc. IEEE International Frequency Control Symposium, IEEE Catalog No. 98CH36165, pp. 292-297, 1998.
79. Time Transfer using Multi-channel GPS Receivers, Judah Levine, Proc. IEEE International Frequency Control Symposium, IEEE Catalog No. 98CH36165, pp. 284-291, 1998.
80. Time Synchronization over the Internet using "AUTOLOCK," Judah Levine, Proc. IEEE International Frequency Control Symposium, IEEE Catalog No. 98CH36165, pp. 241-249, 1998.
81. Introduction to Time and Frequency Metrology, Judah Levine, Review of Scientific Instruments, Vol. 70, 2567-2596, 1999.
82. Carrier-Phase Time Transfer, Kristine M. Larson and Judah Levine, IEEE Trans. on UFFC, vol. 46, pages 1001-1012, 1999.
83. A Long Term Comparison between GPS Carrier Phase and Two-Way Satellite Time Transfer, Kristine Larson, Lisa Nelson, Judah Levine, Tom Parker, Edward D. Powers, Proc. 30 Annual Precise Time and Time Interval Applications and Planning Meeting, Washington, DC: US Naval Observatory, pages 247-255, 1999.
84. Calibration of Carrier Phase GPS Receivers, Lisa M. Nelson, Kristine Larson and Judah Levine, Proc. Joint Meeting of the 13th European Frequency and Time Forum and the Frequency Control Symposium, 1999, Besancon, France, pp. 230-234, IEEE Document 99CH36313.
85. Authenticating Time and Frequency Signals, Judah Levine, Proc. Joint Meeting of the 13th European Frequency and Time Forum and the Frequency Control Symposium, 1999, Besancon, France, pp. 304-308, IEEE Document 99CH36313.
86. Assessment of GPS Carrier-Phase Stability for Time-Transfer Applications, Kristine Larson, Judah Levine, Lisa Nelson and Tom Parker, IEEE Trans. UFFC, Vol. 47, pp. 484-494, 2000.
87. Comparison of Atomic Frequency Standards at NIST and PTB using Carrier-Phase GPS, Lisa Nelson, Judah Levine, Thomas Parker, Kristine Larson, Peter Hetzel and Juergen Becker, Proc. 31<sup>st</sup> Annual Precise Time and Time Interval Applications and Planning Meeting, Washington DC: US Naval Observatory, pages 449-460, 2000.

88. Analysis of Delays in Transmitting Time Code Using an Automated Computer Time Distribution System, Y. Shan, H. Chua, A. Kyaw and J. Levine, Proc. 31<sup>st</sup> Annual Precise Time and Time Interval Applications and Planning Meeting, Washington DC: US Naval Observatory, pages 323-328, 2000.
89. Comparing Primary Frequency Standards at NIST and PTB, Lisa M. Nelson, Judah Levine and Peter Hetzel, Proceedings of the 2000 IEEE/EIA International Frequency Control Symposium, Kansas City, Missouri, pages 622-628, 2000. IEEE Catalog Number 00CH37052.
90. Using the Network Time Protocol (NTP) to Transmit International Atomic Time, Judah Levine and David Mills, Proceedings of the 32<sup>nd</sup> Annual Precise Time and Time Interval Planning and Applications Meeting (PTTI), November, 2000, Washington, DC, US Naval Observatory, pages 431-440.
91. Examining GPS Carrier-Phase Analyses to Evaluate the Accuracy of Frequency Transfer Using Data from NIST and PTB, Lisa Nelson and Judah Levine, Proceedings of the 32<sup>nd</sup> Annual Precise Time and Time Interval Planning and Applications Meeting (PTTI), November, 2000, Washington DC, US Naval Observatory, pages 57-66.
92. GPS and the Legal Traceability of Time, Judah Levine, GPS World, pages 52-58, January, 2001.
93. Technical Reference Manual for NIST Automated Computer Time Service (ACTS), Judah Levine, Michael A. Lombardi, Lisa M. Nelson and Victor S. Zhang, NIST Internal Report 6611, Gaithersburg, Maryland, NIST, July 2001.
94. Legal Traceability of Time, Judah Levine, Symposium of the National Conference of Standards Laboratories (NCSL), Washington DC, July, 2001. Published by NCSL International, Boulder, Colorado, 2001.
95. The Leap Second: Its History and Possible Future, R. A. Nelson, D. D. McCarthy, S. Malys, J. Levine, B. Guinot, H. F. Fliegel, R. L. Beard and T. R. Bartholomew, Metrologia, Vol. 38, Number 6, 2001, pages 509-529.
96. First Comparison of Remote Cesium Fountains, T. Parker, P. Hetzel, S. Jefferts, S. Weyers, A. Bauch and J. Levine, Proceedings of the 2001 International Frequency Control Symposium, Seattle, Washington, 2001, pages 63-68. IEEE catalog number 01CH37218. A very similar paper is published in the Proc. 2001 European Time and Frequency Forum, Pages 57-61, 2001.
97. Understanding the Limitations of GPS Carrier Phase Frequency Transfer on an Transatlantic Baseline, Lisa Nelson and Judah Levine, Proceedings of the 2001 International Frequency Control Symposium, Seattle, Washington, 2001, pages 205-210. IEEE catalog number 01CH37218.



98. A. Gifford, J. Levine, S. Pall, J. McNeff and T. Bartholomew, GPS as a Global Time Service: Proposed Enhancements in Time Keeping and Dissemination, Proc. 2001 Conference on Satellite Navigation, xxx.
99. Review of GPS Carrier-Phase and Two-Way Satellite Time Transfer Measurement Results between Schriever Air Force Base and the United States Naval Observatory, Lisa M. Nelson, Kristine M. Larson and Judah Levine, Proc. ION conference, 1999, pages 1023-1033.
100. NIST computer Time Services: Internet Time Service, Automated Computer Time Service and time.gov Web Sites, Judah Levine, Michael A. Lombardi and Andrew N. Novick, NIST Special Publication 250-59, Boulder: NIST, May, 2002.
101. Efficient Time Transfer Using the Internet, Judah Levine, Proc. Frequency Control Symposium, pages 522-529. Published by the IEEE as document 02CH37234C, ISBN 0-7803-7084-8.
102. The Algorithm Used to Realize UTC(NIST), Judah Levine and Tom Parker, Proc. Frequency Control Symposium, 2002, pages 537-542. Published by the IEEE as document 02CH37234C, ISBN 0-7803-7084-8.
103. Time and Frequency Distribution Using Satellites, Judah Levine, Reports Progress in Physics, Vol. 65, pages 1119-1164, 2002.
104. Using the Internet for Time Synchronization, Judah Levine, IV symposium on Time Scale Algorithms, 18-19 March 2002, Paris, France, International Bureau of Weights and Measures (BIPM), TSAS-08.
105. The algorithm used to realize UTC(NIST), Judah Levine and Tom Parker, IV symposium on Time Scale Algorithms, 18-19 March 2002, Paris, France, International Bureau of Weights and Measures (BIPM), TSAS-27.
106. New Frequency Comparisons using GPS carrier-phase time transfer, Christine Hackman and Judah Levine, Proc. 2003 IEEE Frequency Control Symposium, pp. 258-265, IEEE catalog 03CH37409C, ISBN 0-7803-7689-7
107. The Future of UTC, Judah Levine, Sam Stein and Tom Celano, Proceedings of the 35<sup>nd</sup> Annual Precise Time and Time Interval Planning and Applications Meeting (PTTI), November, 2003, Washington DC, US Naval Observatory, pages 497-500.
108. Coping with overload on the Network Time Protocol public service, David Mills, Judah Levine, R. Schmidt, and D. Plonka, Proceedings of the 36<sup>th</sup> Annual Precise Time and Time Interval Planning and Applications Meeting (PTTI), November, 2004, Washington, DC, US

Naval Observatory, pp 5-16.

109. Averaging satellite timing data for national and international time coordination, Judah Levine, Proceedings of the 36<sup>th</sup> Annual Precise Time and Time Interval Planning and Applications Meeting (PTTI), November, 2004, Washington, DC, US Naval Observatory, pp. 41-52.
110. Adding water vapor radiometer data to GPS carrier-phase time transfer, Christine Hackman and Judah Levine, Proceedings of the 36<sup>th</sup> Annual Precise Time and Time Interval Planning and Applications Meeting (PTTI), November, 2004, Washington, DC, US Naval Observatory, pp. 77-98.
111. A New Technique for Estimating Frequency from GPS Carrier-Phase Time Transfer Data, Christine Hackman, Judah Levine, Thomas Parker, Dirk Piester and Jurgen Becker, Proceedings of the 2004 IEEE International Frequency Control Symposium, pages 341-349, Published by the IEEE with Catalog number 04CH37553C.
112. A straightforward frequency-estimation technique for GPS carrier-phase time transfer, Christine Hackman, Judah Levine, Thomas E. Parker, Dirk Piester and Jurgen Becker, IEEE Trans. Ultrasonics, Ferroelectrics and Frequency Control, Vol. 53, pages 1570-1583, September, 2006.
113. Towards sub- $10^{-16}$  transcontinental GPS carrier-phase frequency transfer: a simulation study, Christine Hackman and Judah Levine, Proceedings of the 2006 IEEE International Frequency Control Symposium, Published by the IEEE, 2006, pp. 779-787.
114. A long-term comparison of GPS carrier-phase frequency transfer and two-way satellite time/frequency transfer, Christine Hackman, Judah Levine and Thomas E. Parker, Proceedings of the 38<sup>th</sup> Annual Precise Time and Time Interval Planning and Applications Meeting (PTTI), November, 2006, Washington, DC, US Naval Observatory, pp. 485-498.
115. A Review of Time and Frequency Transfer Methods, Judah Levine, Metrologia, S162-S174, 2008.
116. Realizing UTC(NIST) at a Remote Location, Judah Levine, Metrologia, 45, S23-S33, 2008.
117. Improvements to the NIST Network Time Protocol Servers, Judah Levine, Metrologia, 45, S12-22, 2008.
118. Steering a Time Scale, Proceedings of the 40<sup>th</sup> Precise Time and Time Interval Systems and Applications Meeting, Reston, Virginia, 1-4 December 2008.
119. Timing in Telecommunications Networks, Judah Levine, Metrologia, vol. 48, pages S203-S212, 2011.

120. Synchronizing Computer Clocks Using Kalman Filters, Judah Levine, Proceedings of the 2011 Joint IEEE International Frequency Control Symposium and the European Time and Frequency Forum, San Francisco, California, 1-5 May 2011, pages 785-790.
121. Synchronizing Computer Clocks by the Use of Kalman Filters, Judah Levine, 2011, Proceedings of the 43rd Annual Precise Time and Time Interval (PTTI) Systems and Applications Meeting, 14-17 November 2011, Long Beach, California, pages 71-80.
122. Invited Review Article, The Statistical Modeling of Atomic Clocks and the Design of Time Scales, Judah Levine, Review of Scientific Instruments, vol. 83, 021101-28, 2012.
123. Time Transfer using a satellite navigation system, McGraw- Hill Year Book of Science and Technology, 2013, pages 363-368.
124. GPS Carrier-Phase Time Transfer Boundary Discontinuity Investigation, Jian Yao and Judah Levine, Proceedings of the 44<sup>th</sup> Precise Time and Time Interval Planning and Applications Meeting (PTTI), Reston, Virginia, 26-29 November 2012, Pages 317-325, 2012.
125. A New Algorithm to Eliminate GPS Carrier-Phase Time Transfer Boundary Discontinuity, Jian Yao and Judah Levine, Proceedings of the 45<sup>th</sup> Precise Time and Time Interval Planning and Applications Meeting, Seattle, Washington, 2-5 December 2013, Pages 292-302.
126. International Comparisons of Network Time Protocol Servers, M. A. Lombardi, J. Levine, J. Mauricio Lopez, F. Jiménez, J. Bernard, M. Gertsvolf, H. Sanchez, O. G. Fallas, L. C. Hernández Forero, R. José de Carvalho, M. N. Fittipaldi, R. F. Solis, and F. Espejo, Proc. 2014 PTTI Meeting, pages 57-66, 2014.
127. An Improvement of RINEX-Shift Algorithm for Continuous GPS Carrier Phase Time Transfer, Jian Yao and Judah Levine, Institute of Navigation International 27<sup>th</sup> Technical Meeting, Dana Point, California, January 2015, pp. 1253-1260.
128. GPS carrier-phase time transfer boundary discontinuity investigation, Jian Yao and Judah Levine, Proc. 44<sup>th</sup> PTTI meeting, 2012, pages 371-326.
129. GPS measurements anomaly and continuous GPS carrier-phase time-transfer, Jian Yao and Judah Levine, Proc. 46<sup>th</sup> Institute of Navigation PTTI Meeting, 2014.
130. Comparison of two continuous GPS carrier-phase time transfer techniques, Jian Yao, Skakun Ivan, Zhiheng Jiang and Judah Levine, Proc. 2015 Joint IEEE Frequency Control Symposium and the European Time and Frequency Forum, pp 655-661.
131. A detailed comparison of two continuous GPS carrier-phase time transfer techniques, J. Yao, I. Skakun, Z. Jiang and J. Levine, Metrologia, vol. 52, pp. 666-676, 2015.

132. Toward Continuous GPS Carrier-Phase Time Transfer: Eliminating the Time Discontinuity at an Anomaly, Jian Yao, Judah Levine and marc Weiss, J. Res. NIST, vol. 120, p. 280-292, 2015.
133. GPS Jamming and GPS Carrier Phase Time Transfer, Jian Yao, Marc Weiss, Charles Curry and Judah Levine, Proc. 47<sup>th</sup> PTTI Meeting, pp 80-85, 2016.
134. Long-term GPS Carrier-phase Time Transfer Noise, Jian Yao and Judah Levine, Proc. 2016 IEEE International Frequency Control Symposium pp. 249-253, 2016.
135. An Auto-Regressive Moving-Average Time Scale Algorithm (ARMA) for synchronizing networked clocks, Judah Levine, Proc. 2016 PTTI meeting, pages 193-197, 2016.
136. A Study of GPS Carrier-phase Time Transfer Noise based on NIST GPS receivers, Jian Yao and Judah Levine, J. Res. NIST, pp 372-388, 2016.
137. An algorithm for synchronizing a clock when the data are received over a network with an unstable delay, Judah Levine, IEEE Transactions on Ultrasonics, Ferroelectrics and Frequency Control (UFFC), 2016, vol. 63, pages 561-570, 2016.
138. A Historical Perspective on the Development of the Allan Variances and their Strengths and weaknesses, David Allan and Judah Levine, IEEE Transactions on Ultrasonics, Ferroelectrics and Frequency Control (UFFC), vol 63, pages 513-519, 2016.
139. The history of time and frequency from antiquity to the present day, Judah Levine, European Journal of Physics, Section H, Vol 41, pages 1-67, 2016.
140. Usage Analysis of the NIST Internet Time Service, Jeff Sherman and Judah Levine, J. Res. of NIST, Vol. 121, pp. 33- 46, 2016.
141. The UT1 and UTC Time Service provided by NIST, Judah Levine, Proceedings of the Conference on the Science of Time, 6-10 June 2016, Harvard University, Cambridge, Massachusetts, Chapter 17.
142. Measuring Time and Comparing Clocks, J. Levine, Handbook of Measurement in Science and Engineering, Chapter 59, pages 2109-2162, 2016.
143. Coordinated Universal Time and the Leap Second, Judah Levine, Radio Science Bulletin #359, International Union of Radio Science (URSI), pp. 30-36, December, 2016.
144. A Study of GPS Carrier Phase Time Transfer Noise based on GPS receivers at NIST, J. Yao and J. Levine, J. Res. NIST, Vol. 121, pages 372-388, 2016.

145. Long-term GPS Carrier-phase time transfer noise, J. Yao and J. Levine, Proc. 2016 IEEE Frequency Control Symposium, pages 101-105.
146. A Pilot study on incorporating an optical clock in a time scale, Jian Yao and Judah Levine, Proc. 48<sup>th</sup> PTTI Meeting, Monterey, California, January, 2017, in press.
147. The Development of a new Kalman-filter time scale at NIST, Jian Yao, Thomas Parker and Judah Levine, Proc. 48<sup>th</sup> PTTI Meeting, Monterey, California, January, 2017, pages 18-25.
148. JY1 time scale: a new Kalman filter time scale designed at NIST, Jian Yao, Thomas Parker and Judah Levine, IEEE Transactions on Ultrasonics, Ferroelectrics and Frequency Control, 2017, submitted.
149. JY1 time scale: a new Kalman filter time scale designed at NIST, Jian Yao, Thomas Parker and Judah Levine, Meas. Sci. and Tech. vol. 28, pages 114004/1-8, 2017.
150. Incorporating an Optical Clock into a time scale, J. Yao, T. Parker, N. Ashby and J. Levine, IEEE Trans. UFFC, Vol. 65, pages 127-134, 2018.
151. Metrological and Legal Traceability of time signals, D. Matsakis, J. Levine and Michael. A. Lombardi, Proc. 2018 Precise Time and Time Interval Planning and Applications Meeting, pp. 59-17, Institute of Navigation, 2018.
152. Judah Levine, Book chapter: Position Navigation and Timing Technologies in the 21<sup>st</sup> century: Integrated Satellite Navigation, Sensor Systems, and Civil Applications, Jade Morton, et al., editors. Published by Wiley-IEEE Press, 2021. ISBN: 978-1-119-45841-8. Chapter 29, Distributing Time and Frequency Information.
153. Jian Yao, Jeffrey Sherman, Tara Fortier, Thomas Parker, **Judah Levine**, Joshua Savory, Stefania Romisch, William McGrew, Xiaogang Zhang, Daniele Nicolodi, Robert Fasano, Stephan Schaeffer, Kyle Beloy, and Andrew Ludlow, Incorporating an Optical Clock into a Time Scale at NIST: Simulations and Preliminary Real-Data Analysis, Proc. 2018 Precise Time and Time Interval Applications and Planning Meeting, Reston, Virginia, pp. 11-21, Institute of Navigation, 2018.
154. Jian Yao, Jeffrey Sherman, Tara Fortier, Holly Leopardi, Thomas Parker, **Judah Levine**, Joshua Savory, Stefania Romisch, William McGrew, Xiaogang Zhang, Daniele Nicolodi, Robert Fasano, Stephan Schaeffer, Kyle Beloy, and Andrew Ludlow, Progress on optical-clock-based time scale at NIST: Simulations and Preliminary real-data analysis, Navigation, Journal of the Institute of Navigation, pp. 1-8, 2018
155. Demetrios Matsakis, Judah Levine, Michael A. Lombardi, Metrological and Legal Traceability of Time Signals, Inside GNSS, March/April 2019, pp. 48-58. [www.insidegnss.com](http://www.insidegnss.com)

156. W. R. Milner, J. M. Robinson, C. J. Kennedy, T. Bothwell, D. Kedar, D. G. Matei, T. Legero, U. Sterr, F. Riehle, H. Leopardi, T. M. Fortier, J. A. Sherman, **J. Levine**, J. Yao, J. Ye, and E. Oelker, Demonstration of a time scale based on a stable optical carrier, *Phys. Rev. Lett.* **123**, 173201/1-6, 2019.
157. J. Yao, J. A. Sherman, T. Fortier, H. Leopardi, T. Parker, W. McGrew, X. Zhang, D. Nicolodi, R. Fasano, S. Schaffer, K. Beloy, J. Savory, S. Romisch, C. Oates, S. Diddams, A. Ludlow, and **J. Levine**, Optical-clock-based time scale, *Phys. Rev. Appl.* **12** 044069/1-10, 2019.
158. Judah Levine, The Statistics of Computer Clocks and the Design of Synchronization Algorithms, *J. Res. of NIST*, Vol. 125, pp. 1-33. <https://doi.org/10.6028/jres.125.008>.
159. P Defraigne, J Achkar, M J Coleman, M Gertsvolf, R Ichikawa, **Judah Levine**, P. Urich, P Whibberley, M Wouters and A Bauch, Achieving traceability to UTC through GNSS measurements, *Metrologia*, **59**, 064001, 2022. doi: 10.1088/1681-7575/ac98cb.
160. Judah Levine, Patrizia Tavella, and Martin Milton, Towards a consensus on a continuous coordinated universal time, *Metrologia*, **60**, 014001, 2023. doi: 10.1088/1681-7575/ac9da5.
161. Judah Levine, The NIST Fiber-based Time Service, Workshop on Synchronization and Timing Systems, Vancouver, BC, 2023, in press.
- 162, Felix Viemeyer and Judah Levine, A Network Time Server based on FPGA hardware, Workshop on Synchronization and Timing Systems, Vancouver, BC, 2023, in press.