

## PUBLICATIONS

**BOOKS:** *Integrated Aircraft Navigation*, Academic Press, 1976.  
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### **CONFERENCE and JOURNAL PUBLICATIONS:**

1. "Pulse Generator with Logarithmic Spacing," *IRE Trans vEC-11* Aug 1962, pp 531-534.
2. "Time-Varying Doppler Navigation Servo" (Co-au), *IEEE Trans vAC-9* July 1964, pp 282-285.
3. "Doppler Radar Clutter" (Co-au), *IEEE Trans vANE-11* Sept 1964, pp 162-172.
4. "Simulation of a Minimum Variance Orbital Navigation System," *AIAA JSR v3* Jan 1966, pp 91-98.
5. "Solution to Problem 65-1" (Co-au), *SIAM Rev v8* July 1966, pp 384-386.
6. "Performance of Strapdown Inertial Attitude Reference Systems," *AIAA JSR v3* Sept 1966, pp 1340-1347.
7. "Alignment Methods for Strapdown Inertial Systems" (Co-au), *AIAA JSR v3* Sept 1966, pp 1432-1434.
8. "Analytic Platforms in Cruising Aircraft," *AIAA J Aircraft v4* Jan 1967, pp 52-58.
9. "Attitude Determination by Kalman Filtering," *AUTOMATICA v6* May 1970, pp 419-430.
10. "Natural Frequencies of a Flexible Gravity-Gradient Satellite" (Co-au), *AIAA JSR v5* May 1968, pp 560-569.
11. "Digital Program for Dynamics of Non-Rigid Gravity-Gradient Satellites" (Co-au), *NASA CR-1119*, Aug 1968.
12. "Solar Pressure and Thermal Effects on the Radio Astronomy Explorer" (Co-au), *AAS/AIAA Astrodynamics Conference*, Jackson Lake Lodge Wyoming Sept 1968.
13. "Comment on 'Evaluation of the Computational Errors of Strapdown Navigation Systems'," *AIAA J v7* Mar 1969, pp 571-572.
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15. "Continuous and Discrete RAE Structural Models" (Co-au), *AIAA JSR v6* Apr 1969, pp 414-423.
16. "Optimal Estimation of Rotation-Coupled Flexural Oscillations" (Co-au), *AIAA JSR v6* Nov 1969, pp 1290-1298.
17. "Comment on 'Gyro Misalignment and Encoder Quantization Effects During Multi-Axis Evaluation of Strapdown Gyros'," *IEEE Trans vAES-6* Sept 1970, pp 707-708.
18. "Comment on 'Nonlinear Filtering Techniques with Application to Strapdown Computation'," *IEEE Trans vAC-16* June 1971, pp 266-267.
19. "Statistical Bit Synchronization in Digital Communications" (Co-au), *IEEE Trans vCOM-19* Aug 1971, pp 487-491.
20. "Digital Mechanization for Single Beam Doppler Navigation," *ION National Air Meeting*, Atlanta Ga., Feb 29 - Mar 2, 1972.

21. "Synthetic Aperture Imaging with Maneuvers" (Co-au), *IEEE Trans vAES-8* July 1972, pp 410-418.
22. "Effects of Navigation Errors in Maneuvering SAR" (Co-au), *IEEE Trans vAES-9* Sept 1973, pp 758-776.
23. "Optimal Air-to-Air Tracking for WX Radar (U)" (Co-au), *Tri-Services Radar Symposium*, West Point N.Y., July 1974 (CONFIDENTIAL).
24. "Dynamic Scaling for Air-to-Air Tracking" (Co-au), *NAECON Symposium*, Dayton Ohio, 1975.
25. "Fixed Point Single Precision Estimation" (Co-au), *AIAA/AAS Astrodynamics Conference*, San Diego Calif., Aug 1975.
26. "Keeping Pace with Avionics Innovations," *NAECON Symposium*, Dayton Ohio, 1977.
27. "Thermal Curvature of Satellite Booms," *AIAA J v15* Sept 1977, pp 1331-1333.
28. "Air-to-Air Designate/Track with Time Sharing" (Co-au), *NAECON Symposium*, Dayton Ohio, 1978.
29. "Transfer Alignment for Precision Pointing Applications," *NAECON Symposium*, Dayton Ohio, 1979.
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31. "Retention Probability in a Track-While-Scan Radar," *IEEE Trans vAES-17* Jan 1981, pp 139-144.
32. "Track Mechanization Alternatives" (Co-au), *NAECON Symposium*, Dayton Ohio, 1981.
33. "Time-Varying Weights for Optimal Control with Inequality Constraints" (Co-au), *AIAA J G&C*, v4 Sept-Oct 1981, pp 566-568.
34. "Integrated and Transferable Hardware/Software Checkout" (Co-au), *NAECON Symposium*, Dayton Ohio, 1982.
35. "Application of VLSI to Strapdown" (Co-au), *NAECON Symposium*, Dayton Ohio, 1983.
36. "Integrated Tracking Software for Multimode Operation," *AIAA Digital Avionics Systems Conference (DASC)*, Baltimore Md., December 1984.
37. "The Enhancement of Armored Vehicle Fire Control Systems Using VHSIC Technology" (Co-au), *ADPA Symposium on Fire Control Systems*, NSWC, White Oak Md., Apr 9-10, 1985.
38. "Strapdown INS Requirements Imposed by Synthetic Aperture Radar," *AIAA J G&C*, v8 n4 Jul-Aug 1985, pp 433-439. *Superseded by* pp 177-198 of *Advances in Aerospace Systems - Dynamics and Control Systems*, v33 pt 3 C.T. Leondes (ed), Academic Press, 1990.
39. "SDI Terminal Stage Tracking," *ION 42nd Annual Meeting*, Seattle, Wash, June 1986 (SECRET/NOFORN).
40. "7-State Tracking Results," *ION Nat'l. Technical Meeting*, Anaheim, Calif., Jan 1987 (SECRET/NOFORN).
41. "Airborne Transfer Alignment & SAR Motion Compensation," *ION 43rd Annual Meeting*, Dayton Ohio, June 1987.
42. "Radar Signal Processor Testing via Digital Simulation [VAXAR]," (Co-au) *ADPA Annual Technical Meeting*, Ft. Eustis, Va, Nov 18-19, 1987.

43. "A Critical Examination of Sensor Fusion," ION 44th Annual Meeting, Annapolis MD, June 1988.
44. "Airborne Transfer Alignment Simulation Results," Position Location and Navigation Symposium (PLANS), Orlando Fla, Nov. 1988.
45. "Biased and Unbiased Estimates in GPS Processing," ION 45th Annual Meeting, Alexandria Va, June 1989.
46. "Ridge Regression: A Cautionary Note," ION 46th Annual Meeting, Atlantic City NJ, June 1990.
47. "That All-Important Interface," (Co-au) ION GPS-90, Colorado Springs, Sept 1990.
48. "Passive Ranging for Target Tracking," (Co-au) ADPA Avionics Technical Symposium, McDonnell-Douglas Auditorium, St. Louis MO, Nov. 1990 (SECRET/NOFORN).
49. "The Expanding Role of Sensor Fusion," ION 47th Annual Meeting, Williamsburg VA, June 1991.
50. "Receiver Autonomous Integrity Monitoring (RAIM): Techniques, Performance, and Potential," (Co-au) ION 47th Annual Meeting, Williamsburg VA, June 1991.
51. "Statistical Validation for GPS Integrity Test," (Co-au) ION GPS-91, Albuquerque NM, Sept 1991 (also IONJ v39 n2 1992, pp 205-216 and "Redbook" of Selected Papers vV 1998, pp 89-100).
52. "Tracking of Ballistic Objects at High Altitudes," ION Nat'l. Tech. Meeting, San Diego, Calif., Jan 1992.
53. "Extended RAIM (ERAIM): Estimation of SV Offset," ION GPS-92, Albuquerque NM, Sept 1992.
54. "Advances in Passive Tracking," (Co-au) Joint Services Data Exchange, Palm Springs Calif, Oct 1992 (ITAR RESTRICTED).
55. "System Integration: Performance Doesn't Measure Up," NAECON Symposium, Dayton Ohio, 1993.
56. "Baseline Fault Detection and Exclusion Algorithm," (Co-au) ION 49th Annual Meeting, Cambridge MA, June 1993.
57. "Integrity Testing for GNSS Sole Means," (Co-au) ION Nat'l. Tech. Meeting, San Diego, Calif., Jan 1994.
58. "A Quantitative Measure of Integrity Error," Position Location and Navigation Symposium (PLANS), Las Vegas Nev., April 1994.
59. "Integrated Nav: the 2nd Edition I Never Wrote," ION 51st Annual Meeting, Colorado Springs, June 1995.
60. "JTIDS RELNAV Redefined," (Co-au) ION Nat'l. Tech. Meeting, Long Beach, Calif., Jan 1998.
61. "Quantum Improvement in Airport Surface Surveillance," (Co-au) ION Nat'l. Tech. Meeting, Long Beach, Calif., Jan 1998.
62. "Radical Streamlining of GPS/INS," ION GPS-98, Nashville TN, Sept 1998.
63. "Comments on 'Summary of RTCA SC-159 Working Group Activities'," (Co-au), IONJ v44 n4 1997, p 497.
64. "DoD Methodology, Past vs. Future," ION Nat'l. Tech. Meeting, San Diego, Calif., Jan 1999.
65. "IMU Coast: Not a Silver Bullet," (Co-au) ION 55th Annual Meeting, Cambridge MA, June 1999.
66. "Send Measurements, Not Coordinates," (Co-au), IONJ v46 n3 1999, pp 203-215.

67. "Multi-Target Tracking in the Littoral Environment" (Co-au), *IEEE Radar Conf.*, Washington D.C. May 2000.
  68. "Modern Generic IMU Interface Standard" (Co-au), *IAIN World Congress*, San Diego, Calif., June 2000.
  69. "Navigation and Tracking," Chapter 14 of *Avionics Handbook (2000)*, also Chapter 19 of 2nd Edition (2007), Cary Spitzer (ed.), CRC Press.
  70. "GDOP and RAIM in Differential Operation," *ION Nat'l. Tech. Meeting*, Long Beach, Calif., Jan 2001. Also *IONJ v48 n3 2001*, pp 195-203.
  71. "Carrier Phase Processing Without Integers," *ION 57th Annual Meeting*, Albuquerque NM, June 2001.
  72. "GPS/INS - A Very Different Way," (Co-au) *ION 57th Annual Meeting*, Albuquerque NM, June 2001.
  73. "Comment on 'Performance Analysis of a Tightly Coupled GPS/Inertial System for Two Integrity Monitoring Methods'," *IONJ v48 n2 2001*, pp 131-132
  74. "GPS for Avionics Synchronization," *ION GPS-2001*, Salt Lake City UT, Sept 2001.
  75. "GPS/INS - Streamlined," *IONJ v49 n4 2002*, pp 171-182.
  76. "Strapdown at the Crossroads," *ION 58th Annual Meeting*, Albuquerque NM, June 2002. Also *IONJ v51 n4 2004*, pp 249-257.
  77. "Unfinished Business - Glaring Absences from the Achievement List," *Position Location and Navigation Symposium (PLANS)*, Monterey CA, April 2004.
  78. "Modular Program for Evaluating IMU Coast Performance," *ION 60th Annual Meeting*, Dayton OH, June 2004.
  79. "Full Integrity Testing for GPS/INS," *ION Nat'l. Tech. Meeting*, San Diego, Calif., Jan 2005. Also *IONJ v53 n1 2006*, pp 33-40.
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  81. "Carrier Phase Coherence as a Sequential Correlation Issue," *Joint IEEE-PLANS / ION 62nd Annual Meeting*, San Diego CA, April 2006.
  82. "Velocity and Acceleration from Unaided Carrier Phase," *Joint IEEE-PLANS / ION 62nd Annual Meeting*, San Diego CA, April 2006.
  83. "ADSB (2nd-) Best Foot Forward?" (Co-au), *Journal of Air Traffic Control v50 n3 Summer 2008*, pp 17-18.
  84. "Robust Design for GNSS Integration," *ION-GNSS 2008*, Savannah GA, Sept. 2008
  85. "Collision Avoidance for Future Operaton," (Co-au) *IEEE-ICNS Conference*, Arlington VA, May 2009.
  87. "Aging SV's –We Have Solutions," *ION-GNSS 2009*, Savannah GA, Sept. 2009
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