

Paul G. Savage Publications

- “Improved Strapdown Inertial System Calibration Procedures, Part 1, Procedures And Accuracy Analysis”, SAI WBN-14020-1, www.strapdownassociates.com, October 20, 2017 (Updated November 10, 2017).
- “Improved Strapdown Inertial System Calibration Procedures, Part 2, Analytical Derivations”, SAI WBN-14020-2, www.strapdownassociates.com, October 20, 2017 (Updated November 10, 2017).
- “Improved Strapdown Inertial System Calibration Procedures, Part 3, Numerical Examples”, SAI WBN-14020-3, www.strapdownassociates.com, November 10, 2017.
- “Down-Summing Rotation Vectors For Strapdown Attitude Updating”, SAI WBN-14019, www.strapdownassociates.com, July 16, 2016.
- “Digital Integration Algorithm Error For Random Process Inputs”, SAI WBN-14018, www.strapdownassociates.com, June 26, 2016.
- “Skewed Sensor Failure Detection Using Parallel Navigation Solutions”, SAI WBN-14017, www.strapdownassociates.com, June 16, 2016.
- “Blazing Gyros - The Movie”, SAI WBN-14016, www.strapdownassociates.com, May 16, 2016.
- “Introduction To The Kinematics Of Point-To-Point Relativity”, SAI WBN-14015, www.strapdownassociates.com, April 17, 2016.
- “Geordie’s Quaternion Decision”, SAI WBN-14014, www.strapdownassociates.com, February 17, 2016.
- “Program Management”, SAI WBN-14013, www.strapdownassociates.com, January 18, 2016.
- “Designing An Extended Kalman Filter For A Stellar Aided Strapdown Inertial Navigation System”, SAI WBN-14012, www.strapdownassociates.com, January 16, 2016.
- “Performance Analysis Of Strapdown Systems”, SAI WBN-14011, www.strapdownassociates.com, June 2, 2016.
- “Computational Elements For Strapdown Systems”, SAI WBN-14010, www.strapdownassociates.com, May 31, 2015.
- “Blazing Gyros - The Evolution Of Strapdown Inertial Navigation Technology For Aircraft - Web Version”, SAI WBN-14009, www.strapdownassociates.com, May 29, 2015.

- “Lever Arm Corrections During INS Transfer Alignment With Wide Angle Initial Heading Error”, SAI WBN-14008, www.strapdownassociates.com, April 17, 2015.
- “Coarse Leveling Of INS Attitude Under Dynamic Trajectory Conditions”, SAI WBN-14007, www.strapdownassociates.com, January 28, 2014.
- “Moving Base Alignment With Large Initial Heading Error”, SAI WBN-14006, www.strapdownassociates.com, October 3, 2014.
- “Modifying The Kalman Filter Measurement To Mitigate Second Order Error Amplification In INS Velocity Matching Alignment Applications”, SAI WBN-14005, www.strapdownassociates.com, July, 15, 2014.
- “Fixed Gain Digital Filter Design For Specified Phase Versus Frequency Response”, SAI WBN-14004, www.strapdownassociates.com, June 29, 2014.
- “Schuler Oscillations”, SAI WBN-14003, www.strapdownassociates.com, June 27, 2014.
- “Redefining Gravity And Newtonian Natural Motion”, SAI WBN-14002, www.strapdownassociates.com, May 21, 2014.
- “Mitigating Second Order Error Effects In Linear Kalman Filters Using Adaptive Process And Measurement Noise”, SAI WBN-14001, www.strapdownassociates.com, May 16, 2014.
- Introduction To Strapdown Inertial Navigation Systems*, Previously provided as part of Paul G. Savage's Introductory Strapdown Inertial Navigation course, Now Available For Purchase From Strapdown Associates, Inc.
- Strapdown Inertial Navigation Lecture Notes*, Previously provided as part of Paul G. Savage's Introductory Strapdown Inertial Navigation Course, Now Available For Purchase From Strapdown Associates, Inc.
- “Blazing Gyros: The Evolution of Strapdown Inertial Navigation Technology for Aircraft”, *AIAA Journal Of Guidance, Control, And Dynamics*, Vol. 36, No. 3, May - Jun 2013, pp. 637-655.
- “Strapdown Sculling Algorithm Design for Sensor Dynamic Amplitude and Phase-Shift Error”, *AIAA Journal Of Guidance, Control, And Dynamics*, Vol. 35, No. 6, Nov - Dec 2012, pp. 1718-1729.
- “Explicit Frequency Shaped Coning Algorithms for Pseudoconing Environments”, *AIAA Journal Of Guidance, Control, And Dynamics*, Vol. 34, No. 3, May-Jun 2011, pp. 1123-1132.
- “Coning Algorithm Design By Explicit Frequency Shaping”, *AIAA Journal Of Guidance, Control, And Dynamics*, Vol. 33, No. 4, Jul-Aug 2010, pp. 774-782.
- “Computational Elements For Strapdown Systems”, NATO/RTO SET-116, Oct 2008.

“Performance Analysis of Strapdown Systems”, NATO/RTO SET-116, Oct 2008.

Strapdown Analytics, Strapdown Associates, Inc., Second Edition, 2007.

“A Unified Mathematical Framework for Strapdown Algorithm Design”, *AIAA Journal Of Guidance, Control, And Dynamics*, Vol. 29, No. 2, Mar - Apr 2006, pp. 237-249.

“Strapdown Inertial Navigation Computational Elements”, NATO/RTO SET-064, Oct 2003.

“Strapdown System Performance Analysis”, NATO/RTO SET-064, Oct 2003.

“Analytical Modeling of Sensor Quantization in Strapdown Inertial Navigation Error Equations”, *AIAA Journal Of Guidance, Control, And Dynamics*, Vol. 25, No. 5, Sep - Oct 2002, pp. 833-842.

Strapdown Analytics, Strapdown Associates, Inc., First Edition, 2000.

“Strapdown Inertial Navigation System Integration Algorithm Design Part 2 - Velocity & Position Algorithms”, *AIAA Journal Of Guidance, Control, And Dynamics*, Vol. 21, No. 2, Mar - Apr 1998, pp. 208-221.

“Strapdown Inertial Navigation System Integration Algorithm Design Part 1 - Attitude Algorithms”, *AIAA Journal Of Guidance, Control, And Dynamics*, Vol. 21, No. 1, Jan - Feb 1998, pp. 19-28.

“Advances In Strapdown Sensors”, NATO/AGARD LS-133, May 1984.

“Strapdown System Algorithms”, NATO/AGARD LS-133, May 1984.

“The Evolution of Honeywell Laser Gyro Inertial Navigation Technology” presented to Los Angeles Chapter of the ION, El Segundo, California, Nov 14, 1979.

“Strapdown Sensors”, NATO/AGARD LS-95, Jun 1978.

“Calibration Procedures For Laser Gyro Strapdown Inertial Navigation Systems”, 9th Annual Electro-Optics/Laser Conference and Exhibition, Anaheim, California, Oct 25-27, 1977.

“Honeywell Laser Gyros”, Advanced Missiles Systems Committee Convention, Albuquerque, New Mexico, Mar 23-25, 1977.

“Laser Gyros in Strapdown Inertial Navigation Systems”, IEEE Position Location and Navigation Symposium, San Diego, California, Nov 1-3, 1976.

“Honeywell Laser Inertial Navigation System (LINS) Test Results”, Ninth Data Exchange For Inertial Systems, Clearwater, Florida, Nov 1975.

- “The Honeywell Laser Inertial Navigation System (LINS)”, ION NAECON, Dayton, Ohio, Jun 1975.
- “Recent Trends In Strapdown Navigation Technology”, AIAA Guidance and Control Conference, Key Biscayne, Florida, Aug 1973.
- “Optimum Aiding Of Inertial Navigation Systems Using Air Data”, AIAA Guidance and Control Conference, Stanford, California, Aug 1972.
- “Midcourse Guidance Shipboard System Support”, Symposium on Marine Inertial Navigation Systems (MINS), John Hopkins University Applied Physics Laboratory, Silver Springs, Maryland, Jun 1970.
- “A Strapdown Phased Array Radar Tracker Loop Concept For a Radar Homing Missile”, AIAA Guidance, Control, and Flight Mechanics Conference, Aug 1969.
- “A New Second Order Solution For Strapped-Down Attitude Computation”, AIAA/JACC Guidance and Control Conference, Aug 1966.
- “Terminal Prediction Guidance”, AIAA/ION Guidance and Control Conference, Aug 1965.
- “Theoretical Optimum Design of a Low frequency, Small Size, Band-Pass Electronic Filter”, *Infrared Physics*, 1963, Vol. 3, pp. 49-68, Pergamon Press Ltd., Printed in Great Britain.