

## Paul G. Savage Publications

- “Modern Strapdown Attitude Algorithms And Their Accuracy, Versus Accuracy Requirements For Unaided Strapdown Inertial Navigation”, SAI WBN-14025, [www.strapdownassociates.com](http://www.strapdownassociates.com), February 9, 2020.
- “Analytical Description Of Optical Gyros”, SAI WBN-14024, [www.strapdownassociates.com](http://www.strapdownassociates.com), April 3, 2019.
- “Analytically Deriving How Ring Laser And Fiber Optic Gyros Measure Angular Rotation”, SAI WBN-14023, [www.strapdownassociates.com](http://www.strapdownassociates.com), November 1, 2018 (Updated March 31, 2019).
- “Differential Point-To-Point Relativity In Rotating Coordinates”, SAI WBN-14022, [www.strapdownassociates.com](http://www.strapdownassociates.com), May 28, 2018.
- “Improved Strapdown Inertial Measurement Unit Calibration Procedures”, IEEE/ION Position Location and Navigation Symposium (PLANS), Monterey, California, Apr 23-26, 2018
- “Differential Kinematics Of Point-To-Point Relativity”, SAI WBN-14021, [www.strapdownassociates.com](http://www.strapdownassociates.com), March 11, 2018.
- “Improved Strapdown Inertial System Calibration Procedures, Part 1, Procedures And Accuracy Analysis”, SAI WBN-14020-1, [www.strapdownassociates.com](http://www.strapdownassociates.com), October 20, 2017 (Updated January 11, 2018).
- “Improved Strapdown Inertial System Calibration Procedures, Part 2, Analytical Derivations”, SAI WBN-14020-2, [www.strapdownassociates.com](http://www.strapdownassociates.com), October 20, 2017 (Updated January 11, 2018).
- “Improved Strapdown Inertial System Calibration Procedures, Part 3, Numerical Examples”, SAI WBN-14020-3, [www.strapdownassociates.com](http://www.strapdownassociates.com), November 10, 2017, (Updated January 11, 2018).
- “Down-Summing Rotation Vectors For Strapdown Attitude Updating”, SAI WBN-14019, [www.strapdownassociates.com](http://www.strapdownassociates.com), July 16, 2017.
- “Digital Integration Algorithm Error For Random Process Inputs”, SAI WBN-14018, [www.strapdownassociates.com](http://www.strapdownassociates.com), June 26, 2017.
- “Skewed Sensor Failure Detection Using Parallel Navigation Solutions”, SAI WBN-14017, [www.strapdownassociates.com](http://www.strapdownassociates.com), June 16, 2016.
- “Blazing Gyros - The Movie”, SAI WBN-14016, [www.strapdownassociates.com](http://www.strapdownassociates.com), May 16, 2016.

- “Introduction To The Kinematics Of Point-To-Point Relativity”, SAI WBN-14015, [www.strapdownassociates.com](http://www.strapdownassociates.com), April 17, 2016 (Updated May 3, 2018).
- “Geordie’s Quaternion Decision”, SAI WBN-14014, [www.strapdownassociates.com](http://www.strapdownassociates.com), February 17, 2016.
- “Program Management”, SAI WBN-14013, [www.strapdownassociates.com](http://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](http://www.strapdownassociates.com), January 16, 2016.
- “Performance Analysis Of Strapdown Systems”, SAI WBN-14011, [www.strapdownassociates.com](http://www.strapdownassociates.com), June 2, 2016.
- “Computational Elements For Strapdown Systems”, SAI WBN-14010, [www.strapdownassociates.com](http://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](http://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](http://www.strapdownassociates.com), April 17, 2015.
- “Coarse Leveling Of INS Attitude Under Dynamic Trajectory Conditions”, SAI WBN-14007, [www.strapdownassociates.com](http://www.strapdownassociates.com), January 28, 2014.
- “Moving Base Alignment With Large Initial Heading Error”, SAI WBN-14006, [www.strapdownassociates.com](http://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](http://www.strapdownassociates.com), July, 15, 2014.
- “Fixed Gain Digital Filter Design For Specified Phase Versus Frequency Response”, SAI WBN-14004, [www.strapdownassociates.com](http://www.strapdownassociates.com), June 29, 2014.
- “Schuler Oscillations”, SAI WBN-14003, [www.strapdownassociates.com](http://www.strapdownassociates.com), June 27, 2014.
- “Redefining Gravity And Newtonian Natural Motion”, SAI WBN-14002, [www.strapdownassociates.com](http://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](http://www.strapdownassociates.com), May 16, 2014.

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