

PUBLICATIONS LIST

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Journal Articles

- “Advances in Attitude Determination with Redundant Inertial Measurement Units”, *AAS Journal of the Astronautical Sciences*, Vol. 54, Nos. 3 & 4, 2006 (Special Edition for the Malcolm D. Shuster Symposium).
- “Calibration and Attitude Determination with Redundant Inertial Measurement Units”, *AIAA Journal of Guidance, Control, and Dynamics*, Vol. 28, No. 4, July–August 2005, pp. 743–752.
- “An Analysis of the Quaternion Attitude Determination Filter”, *Journal of the Astronautical Sciences*, Vol. 51, No. 1, 2003, pp. 103–120.
- “Rotation Vector in Attitude Estimation”, *AIAA Journal of Guidance, Control, and Dynamics*, Vol. 26, No. 6, 2003, pp. 855–860.
- “Composite Estimate of Spacecraft Sensor Alignment Calibrations”, *AIAA Journal of Guidance, Control, and Dynamics*, Vol. 26, No. 2, Mar–Apr 2003, pp. 371–374.
- “Everything is Relative in System Alignment Calibration”, *AIAA Journal of Spacecraft and Rockets*, Vol. 39, No. 3, May–June 2002, pp. 460–466.
- “Kalman Filtering for Spacecraft System Alignment Calibration”, *AIAA Journal of Guidance, Control, and Dynamics*, Vol. 24, No. 6, Nov–Dec 2001, pp. 1187–1195.
- “Optimal Periodic Control for Spacecraft Pointing and Attitude Determination”, *AIAA Journal Guidance, Control, and Dynamics*, Vol. 16, No. 6, Nov–Dec 1993, pp. 1078–1084.

Conference Papers

- “General Definition Of Relative Misalignment”, Paper No. AAS 08-289, F. Landis Markley Astronautics Symposium, Cambridge, Maryland, 29 June – 2 July, 2008, in *Advances in the Astronautical Sciences* (to appear), 14 p.
- “Attitude Sensor and Gyro Calibration for Messenger”, Paper No. (TBD), AIAA Astrodynamics Specialist Conference, Honolulu, HI, 18–21 August 2008.
- “General Definition of Relative Misalignment”, Paper No. AAS 08-289, F. Landis Markley Astronautical Symposium, 29 June – 2 July 2008, Cambridge, MD, to appear in *Advances in the Astronautical Sciences*.
- “Survey of Calibration Algorithms for Spacecraft Attitude Sensors and Gyros”, Paper No. AAS 07-295, AAS/AIAA Astrodynamics Specialist Conference, Mackinac Is., MI, 19–23 Aug 2007.
- “Advances in Attitude Determination with Redundant Inertial Measurement Units”, Paper No. AAS 06-110, AAS/AIAA Spaceflight Mechanics Meeting, Tampa, Florida, 22–26 January 2006, in *Advances in the Astronautical Sciences*, Vol. 124, Part I, 2006, pp. 163–178. [CD-ROM, Book]

- “Recent Advances in Calibration of Redundant Inertial Measurement Units”, *Flight Mechanics Symposium*, NASA Goddard Space Flight Center, NASA/CP-2005-212789, 18–20 October 2005, [CD-ROM]
- “Cascaded and Decoupled RIMU Calibration Filters”, Paper No. AAS 05-466, Malcom D. Shuster Astronautics Symposium, Grand Island, NY, 12–15 June 2005. In *Advances in the Astronautical Sciences*, Vol. 122, Part I, 2006, pp. 273–288. [CD-ROM, Book]
- “Observability and Calibration of a Redundant Inertial Measurement Unit (RIMU)”, Paper No. AAS 05-105, AAS/AIAA Space Flight Mechanics Meeting, Copper Mountain, CO, 23–27 January 2005. In *Advances in the Astronautical Sciences*, Vol. 120, Part I, 2005, pp. 71–84. [CD-ROM, Book]
- “RIMU Misalignment Vector Decomposition”, AAS/AIAA Astrodynamics Specialist Conference, Paper No. AIAA-2004-4856, Providence, RI, 16–19 August 2004, [CD-ROM, On-line]
- “Attitude Determination and Calibration with Redundant Inertial Measurement Units”, Paper No. AAS 04-116, AAS/AIAA Space Flight Mechanics Meeting, 8–12 February 2004, Maui, HI. In *Advances in the Astronautical Sciences*, Vol. 119, Part I, pp. 229–248, 2005. [CD-ROM, Book]
- “Definitions, Metrics, and Algorithms for Displacement, Jitter, and Stability”, Paper No. AAS 03-559, AAS/AIAA Astrodynamics Specialists Conference, Big Sky, MT, 3–7 August 2003. In *Advances in the Astronautical Sciences*, Vol. 116, Part II, pp. 901–920, 2003. [CD-ROM, Book]
- “Definitions, Metrics, and Algorithms for Displacement, Jitter, and Stability”, *Flight Mechanics Symposium*, NASA Goddard Space Flight Center, NASA/CP-2003-212246, 28–30 October 2003, [CD-ROM].
- “Measurement Sensitivity Equations in Attitude Determination”, *Flight Mechanics Symposium*, NASA Goddard Space Flight Center, NASA/CP-2003-212246, 28–30 October 2003.
- “An Analysis of the Quaternion Attitude Determination Filter”, AAS/AIAA Space Flight Mechanics Meeting, Ponce, PR, 9–13 February 2003, Paper No. AAS 03-194, in *Advances in the Astronautical Sciences*, Vol. 114, Part II, pp. 1337–1352, 2003.
- M. Pittelkau and W. Dellinger, “Attitude Sensor Alignment and Calibration for the TIMED Spacecraft”, Paper No. AAS 03-153, AAS/AIAA Space Flight Mechanics Meeting, Ponce, PR, in *Advances in the Astronautical Sciences*, Vol. 114, Part II, pp. 821–833, 9–13 February 2003.
- “Square Root Quaternion Estimation”, Paper No. 2002-4914, *AIAA Guidance, Navigation, and Control Conference*, Monterey, CA, August 2002.
- “Attitude Determination Using the Bortz Equation”, Paper No. AAS-01-310, *AIAA/AAS Astrodynamics Specialist Conference*, Quebec City, Quebec, Canada, 30 July–2 August 2001, in *Advances in the Astronautical Sciences*, Vol. 1, Part 1, 2001, pp. 153–165.
- “A Factorization and Least-Squares Method for Multi-Pass Sensor Alignment Calibration”, Paper No. AAS 01-151, AAS/AIAA Space Flight Mechanics Meeting, Santa Barbara, CA, 11–15 February 2001.
- “Everything is Relative in System Alignment Calibration”, Paper No. AIAA-2000-4246, *AIAA/AAS Astrodynamics Specialist Conference*, August 2000.

- “A Kalman Filter Approach to System Alignment Calibration”, Paper No. AAS 00-127, *AAS/AIAA Space Flight Mechanics Meeting*, January 2000.
- L. Haas and M. Pittelkau, “Real-Time High Accuracy GPS Onboard Orbit Determination for Use on Remote Sensing Satellites”, ION GPS ’99, Proceedings of the 12th International Technical Meeting of the Satellite Division of the Institute of Navigation, Nashville Convention Center, Nashville, TN, 14–17 September 1999, pp. 829–836.
- A. Garber, L. Haas, M. Pittelkau, “Performance Evaluation of the GPS Onboard Orbit Determination Software to Ensure Improved Positioning Accuracy”, *Flight Mechanics Symposium*, NASA/GSFC, NASA/CP-1999-209235, May 1999, pp. 141–154.
- “Comparison of Four Torque Distribution Methods for Attitude Control”, *Flight Mechanics Symposium*, NASA/GSFC, NASA/CP-1999-209235, May 1999, pp. 253–267.
- “Distortion and Alignment Calibration of a CCD-Based Fine Sun Sensor”, *Flight Mechanics and Estimation Symposium*, NASA/GSFC, May 1997.
- “Frequency Weighted LQG Control of Spacecraft Attitude”, *IEEE Conference on Control Applications*, 13-16 September 1992, Vol. 1, pp. 336–341.
- “Parameter Adaptive Gun Fire Control”, *Ninth Meeting of the Coordinating Group on Modern Control Theory*, ARDEC, Picatinny, N. J., 12 Oct 1989.
- “Adaptive Load-Sharing Force Control for Two-Arm Manipulators”, *1988 International Conference on Robotics and Automation*, 24-29 April 1988, Vol. 1, pp. 498–503. **Philips Prize** for best paper submitted by a graduate student, awarded by the North American Philips Corporation.
- “Reflex-Action Position Control of Robots: Comparison with Impedance Control”, *IEEE SouthEastCon ’88*, 11-13 April 1988, pp. 408–412.
- “Decoupled Simulation Results for Two-Arm Robotic Systems”, *1987 IEEE Southeastern Symposium on System Theory*.

White Papers

- “Seven Reasons to Fully Calibrate a Redundant IMU”, Aerospace Control Systems Engineering and Research, September 2007. [http://www.acsinnovations.com/published/Seven Reasons to Fully Calibrate a Redundant IMU.pdf](http://www.acsinnovations.com/published/SevenReasons%20to%20Fully%20Calibrate%20a%20Redundant%20IMU.pdf)

Book Co-Editor

- D.J. Scheeres, M.E. Pittelkau, R.J. Proulx, and L.A. Cangahuala, Editors. 2003. *Spaceflight Mechanics 2003*, Vol. 114, Parts I–III, *Advances in the Astronautical Sciences*, American Astronautical Society, 2003, 2287 pages, includes CD-ROM Supplement.