

Awards

23. Nov. 2001	Fritz-Löschner award 2001 from the Austrian Geodetic Commission
11. Sept. 2003	Burgen Scholarship from the Academia Europea
21. Nov, 2003	Würdigungspreis 2003 für hervorragende Studienleistungen von der österreichischen Ministerin für Bildung, Wissenschaft und Kultur
Sept. 2008	ION-GNSS 2008, Best Presentation Award for: “Demonstration of a Synthetic Phased Array Antenna for Carrier/Code Multipath Mitigation”
Sept. 2009	ION-GNSS 2009, Best Presentation Award for: “Performance of a Partially Coherent Ultra-tightly Coupled GNSS/INS Pedestrian Navigation System Enabling Coherent Integration Times of Several Seconds to Track GNSS Signals Down to 0 dBHz”
Sept. 2011	ION-GNSS 2011, Best Presentation Award for: “Wide-Band Signal Processing Features for Reference Station use of a PC-based Software Receiver: Cross-correlation Tracking on GPS L2P, AltBOC and the Inter-frontend Link for up to Eight Frequency Bands”
Sept. 2013	ION-GNSS 2013, Best Presentation Award for: “GNSS Synthetic Aperture Processing with Artificial Antenna Motion”
Sept. 2017	ION-GNSS 2017, Best Presentation Award for: “Feasibility Study of Using UAVs as GNSS Satellites”

List of Publications

Note: These lists are sorted in chronological order. The most recent publications are at the end of each list.

Books

1. Pany, T.: **“Navigation Signal Processing for GNSS Software Receivers,”** ISBN: 9781608070282, Artech House, Norwood, 2010.
2. J.H. Won, Pany, T.: **“Signal Processing”** in *The GNSS Handbook*, ISBN 978-3-319-42926-7, Springer, 2017.

Patents

3. Pany, T., F. Förster: **“Übertragungsfehlererkennung bei asynchroner Übertragung von kontinuierlichen Satellitennavigationsdaten,”** DE 102008014981, EP 2257827, WO 2009/115320
4. Pany, T., F. Förster, **„Device and method for producing a data stream on the basis of data packets provided with packet sequence marks, and satellite receivers for providing the data stream“**, US Pat. No. 8,451,170, May 28, 2013.
5. Pany, T.: **„Verfahren zur Korrelation von einem abgetasteten Signal mit einem Replikasignal“**, DE: 10 2011 113 966.8
6. Pany, T.: **„Verfahren zur Erhöhung der Signalenergie in einem Empfänger und Differenzkorrelator, Signalverarbeitungsanordnung und Signallaufzeitmesssystem dafür“**, DE: 10 2011 102 340.6

Publications as Main Author

7. Lang, C., T. Pany: **“A fixed-point action for the lattice Schwinger model,”** Nucl. Phys. B (Proc. Suppl.) 63A-C (1998) pp. 898-900, 1998.
8. Lang, C., T. Pany: **“Fixed point action for the massless lattice Schwinger model,”** Nucl. Phys. B, 513 (3) (1998), pp. 645-657, 1998.
9. Pany, T., G. Stangl: **“EUVN97 Processing Results of the Analysis Center Austria”** Report on the Results of the European Vertical Reference Network GPS Campaign 97 (EUVN’97), pp. 42-51, June 1998.
10. T. Pany: **“Monitoring of a DGPS Reference Network,”** 5th International Symposium on GPS in Central Europe, Penc/Ungarn, 5.-7. May 1999.
11. T. Pany, P. Pesec, G. Stangl: **“Atmospheric GPS slant path delays and ray tracing through numerical weather prediction models, a comparison,”** Phys. Chem. Earth (A), 26(3), pp. 183-188, 2001.
12. T. Pany, P. Pesec, G. Stangl: **“Elimination of tropospheric path delays in GPS observations with the ECMWF numerical weather model,”** Phys. Chem. Earth (A), 26(6-8), pp. 487-492, 2001.
13. T. Pany: **“Measuring and Modeling the Slant Wet Delay with GPS and the ECMWF NWP Model,”** Phys. Chem. Earth, 2002, pp. 347-354, 2002.
14. Pany T., M. Irsigler, B. Eissfeller, J. Winkel: **“Code and Carrier Phase Tracking Performance of a Future Galileo RTK Receiver,”** Proc. GNSS 2002, Copenhagen, 2002.
15. Pany T., B. Eissfeller, J. Winkel: **“Analysis of the Ionospheric Influence on Signal Propagation and Tracking of Binary Offset Carrier (BOC) Signals For Galileo And GPS,”** Proc. of the 27 General Assembly of the International Union of Radio Science, Maastricht, August, 2002.
16. Pany T., B. Eissfeller, J. Winkel: **“Tracking of High Bandwidth GPS/Galileo Signals with a Low Sample Rate Software Receiver,”** Proc. GNSS 2003, Graz, 2003.
17. Pany, T.: **“Tropospheric GPS Slant Delays at Very Low Elevations,”** Proc. of International Workshop on GPS Meteorology, January, Tsukuba, Japan, 2003.
18. Pany, T., B. Eissfeller: **“Code and Phase Tracking of Generic PRN Signals with Low Sample Rates and a Cramer-Rao Correlator,”** NAVIGATION, Vol. 51, 2004.
19. Pany, T., S.W. Moon, K. Furlinger, M. Irsigler, B. Eissfeller: **“Performance Assessment of an Under-Sampling SWC Receiver for Simulated High-Bandwidth GPS/Galileo Signals and Real Signals,”** Proc. ION-GPS 2003, Portland, 2003.
20. Pany T., B. Eissfeller, G. Hein, S. W. Moon and D. Sanroma ipexSR: **“A PC Based Software GNSS Receiver Completely Developed in Europe”**, Proc. ENC-GNSS 2004, Rotterdam, 2004.
21. Pany, T., F. Förster and B. Eissfeller: **“Real-Time Processing and Multipath Mitigation of High-Bandwidth L1/L2 GPS Signals with a PC-Based Software Receiver,”** Proc. ION-GNSS 2004, Long Beach, 2004.
22. Pany, T., F. Förster, D. Sanroma, B. Eissfeller: **“A High-Bandwidth GPS L1/L2 C/A Code Software Receiver For Real-Time Kinematic (RTK) Positioning,”** Proc. Navitec 2004, Nordwijk, 2004.

23. Pany, T., F. Förster, D. Sanroma, J.-Á. Ávila-Rodríguez, B. Eissfeller: **“Signal Processing in a PC-Based Real-Time GPS L1/L2 C/A-Code Software Receiver for High Precision Applications,”** Proc. of 12th Saint Petersburg International Conference on Integrated Navigation Systems, St. Petersburg, 23-25 May 2005.
24. Pany, T., R. Kaniuth, B. Eissfeller: **“Testing a Vector Delay/Frequency Lock Loop Implementation with the ipex Software Receiver,”** Proc. of GPS/GNSS Symposium 2005, 16-18 Nov., Tokyo, 2005.
25. Pany, T., B. Eissfeller: **“The Architecture of our IPEX Software Receiver with Focus on High-Precision Applications,”** Proc. of GPS/GNSS Symposium 2005, 16-18 Nov., Tokyo, pp. 307-326, 2005.
26. Pany, T., R. Kaniuth, B. Eissfeller: **“Deep Integration of Navigation Solution and Signal Processing,”** Proc. ION-GNSS 2005, 13-16 Sept., Long Beach, 2005.
27. Pany, T., M. Irsigler, B. Eissfeller: **S-Curve Shaping: “A New Method for Optimum Discriminator Based Code Multipath Mitigation,”** Proc ION-GNSS 2005, 13-16 Sept., Long Beach, 2005.
28. Pany, T., M. Irsigler, B. Eissfeller: **“Optimum Coherent Discriminator Based Code Multipath Mitigation by S-Curve Shaping for BOC(n,n) and BPSK Signals”**, Proc. ENC-GNSS 2005, Munich, July, 2005.
29. Pany, T., F. Förster, D. Sanroma, J.-Á. Ávila-Rodríguez, B. Eissfeller: **“Signal Processing in a PC-Based Real-Time GPS L1/L2 C/A-Code Software Receiver for High Precision Applications,”** Proc. of 12th Saint Petersburg International Conference on Integrated Navigation Systems, St. Petersburg, 23-25 May 2005.
30. Pany, T., B. Eissfeller and G. Hein: **“A Two Dimensional (Delay/Doppler) Multi Correlator in a Multi-Frequency PC-Based Software Receiver,”** Proc. NAVITEC 2006, Noordwijk, Holland, 2006.
31. Pany, T., J.-H. Won, G. Hein: **“GNSS Software Defined Radio: Real Receiver or Just a Tool for Experts?,”** InsideGNSS, vol. 1, no. 5, Gibbons Media & Research, 2006.
32. Pany, T., B. Eissfeller: **“Use of a Vector Delay Lock Loop Receiver for GNSS Signal Power Analysis in Bad Signal Conditions,”** Proc. IEEE PLANS 2006, 25-27 April, San Diego, 2006.
33. Pany, T.: **“Nutzen des Post-Processings von aufgezeichneten GPS-Zwischenfrequenzsignalen zur Positionierung bei Abschattungen und im Indoor Bereich,”** Österreichische Zeitschrift für Vermessung und Geoinformation, Heft 4, 2006.
34. Pany, T., M. Paonni, B. Eissfeller: **“Synthetic Phased Array Antenna for Carrier/Code Multipath Mitigation,”** Proc. ENC-GNSS 2008, 22-25 April, Toulouse, 2008.
35. Pany, T., B. Eissfeller: **“Demonstration of Synthetic Phased Array Antenna for Carrier/Code Multipath Mitigation,”** Proc. ION-GNSS 2008, 16-19 Sept., Savannah, 2008.
36. Pany, T., J. Winkel, B. Riedl, M. Restle, T. Wörz, R. Schweikert, H. Niedermeier, G. Ameres, B. Eissfeller, S. Lagrasta, G. López-Risueño: **“Performance of a Partially Coherent Ultra-Tightly Coupled GNSS/INS Pedestrian Navigation System Enabling Coherent Integration Times of Several Seconds to Track GNSS Signals Down to 1.5 dBHz,”** Proc. ION-GNSS 2009, 22-25 Sept., Savannah, pp. 919-934, 2009.
37. Pany, T., J. Winkel, B. Riedl, T. Wörz, R. Schweikert, H. Niedermeier, B. Eissfeller, S. Lagrasta, G. López-Risueño, D. Jiménez-Baños: **“Coherent Integration Time: the Longer the Better,”** InsideGNSS, vol. 4, no. 6, Gibbons Media & Research, pp. 52-61, 2009.
38. Pany, T., Riedl, B. and Winkel, J.: **“Efficient GNSS Signal Acquisition with Massive Parallel Algorithms using GPUs,”** Proc ION-GNSS 2010, 21-24 Sept., Portland, 2010.
39. Pany, T., E. Göhler, M. Irsigler and J. Winkel: **“On the State-of-the-Art of Real-Time GNSS Signal Acquisition - a Comparison of Time and Frequency Domain Methods,”** Proc. IEEE Int. Conf. on Indoor Positioning and Indoor Navigation (IPIN), 15-17 Sept., Zurich, pp. 529-536, 2010.
40. Pany, T., Winkel, J., Riedl, B., Niedermeier, H., Eissfeller, B., Wörz, T., Schweikert, R., Lagrasta, S., Nicolé, R., López-Risueño and G., Jiménez-Baños, D.: **“Experimental Results from an Ultra-Tightly Coupled GPS/Galileo/WiFi/ZigBee/MEMS-IMU Indoor Navigation Test System Featuring Coherent Integration Times of Several Seconds,”** Proc. NAVITEC 2010, Noordwijk, Holland, 2010.
41. Pany, T., Falk, N., Riedl, B., Hartmann, T., Winkel, J., Stangl, G.: **“Wide-band Signal Processing Features for Reference Station use of a PC-based Software Receiver: Cross-Correlation Tracking on GPS L2P, AltBOC and the Inter-frontend Link for up to Eight Frequency Bands,”** Proceedings of the 24th International Technical Meeting of The Satellite Division of the Institute of Navigation (ION GNSS 2011), Portland, OR, pp. 753-766, September 2011.
42. Pany, T., Euler, H.-J., Winkel, J.: **“Indoor Carrier Phase Tracking and Positioning with Difference Correlators,”** Proceedings of the 24th International Technical Meeting of The Satellite Division of the Institute of Navigation (ION GNSS 2011), Portland, OR, pp. 2202-2213, September 2011.
43. Pany, T., Nico Falk, Bernhard Riedl, Carsten Stöber, Jón Winkel and Franz-Josef Schimpl: **„Concept of Synthetic Aperture GNSS Signal Processing Under Canopy”**, Proc. ENC-GNSS 2012, Vienna, Austria.
44. Pany, T., Nico Falk, Bernhard Riedl, Carsten Stöber, Tobias Hartmann and Günther Stangl: **„Innovation: Receiver Technology, Software Receivers, an answer for precise positioning research”**, GPS World, vol. 23, no. 9, pp. 60-66, Sept. 2012.

45. Pany, T., Euler, H.-J., Winkel, J.: „**Difference Correlators Does Indoor Carrier Phase Tracking Allow Indoor RTK?**”, InsideGNSS, pp. 20-32, May/June 2012.
46. Pany, T., Falk, N., Riedl, B., Stöber, C., Winkel, J., Ranner, H.-P.: "**GNSS Synthetic Aperture Processing with Artificial Antenna Motion,**" Proceedings of the 26th International Technical Meeting of The Satellite Division of the Institute of Navigation (ION GNSS+ 2013), Nashville, TN, pp. 3163-3171, September 2013.
47. Pany, T., Nico Falk, Bernhard Riedl, Carsten Stöber, Jón Winkel and Franz-Josef Schimpl: „**Innovation: Under Cover: Synthetic-Aperture GNSS Signal Processing**”, GPS World, pp. 42-50, vol. 24, no. 9, Sept. 2013.
48. T. Pany, J. Dampf, C. Stöber, W. Bär, J. Winkel, K. Furlinger, P. Closas: „**Benchmarking CPUs and GPUs on Desktop PCs and Embedded Platforms**”, Proc. ION GNSS+ 2015 (paper peer reviewed), Tampa Florida, 2015.
49. T. Pany, J. Dampf, C. Stöber, W. Bär, J. Winkel, K. Furlinger, P. Closas, J. A. Garcia-Molina: “**More than we ever dreamed of: processor technology for GNSS software receivers in the year 2015**”, insideGNSS, July/August, pp. 62-72, 2015.
50. Pany, Thomas, Yang, Chun, "**Code and Carrier Tracking for Spectrally Asymmetric Signals,**" Proceedings of the 2017 International Technical Meeting of The Institute of Navigation, Monterey, California, January 2017, pp. 335-346

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51. Stangl, G., T. Pany and P. Pesec: “**The Geodynamic Project SEAGC’95,**” In: Proceedings of the IAG EUREF Symposium held in Sofia, pp. 243-249, June 1997.
52. Ferraro, L., M. Marjanovic, L. Mervart, M. Becker, T. Rus, T. Pany, G. Stangl, A. Kenyeres, J. Hefty, J. B. Rogowski and M. Figurski: “**Final results of the CEGRN observation campaigns,**” Reports on Geodesy of the Warsaw University of Technology, No. 9(39), pp. 317-341, 1998.
53. Fachbach, N., T. Pany and G. Stangl: “**OLG Processing Center, Final Report,**” Reports on Geodesy of the Warsaw University of Technology, No. 10(40), p. 214, 1998..
54. Pany, T., G. Stangl: “**EUREF Analysis Center OLG. Investigations and Developments 1996-1998,**” Report on the Symposium of the IAG Subcommission for Europe (EUREF) held in Bad Neuenahr/Germany, May 1998, Mitteilungen des BKG Frankfurt 7/I, pp.47-49, 1999.
55. Pany, T., P. Pesec and G. Stangl: “**OLG GPS Services at Graz,**” In: Proceedings. of the 5th Int. Seminar on GPS in Central Europe, Penc, 5-7 May 1999.
56. Döller, H., T. Auzinger, P. Pesec and T. Pany: “**Precise dGPS in Austria goes Practice,**” AGIT Symposium 1999, Salzburg, 7-9 July 1999.
57. Pany, T., P. Pesec and G. Stangl: “**EUREF Data Flow, Diagnostics, Proposals and Possible Improvements,**” Report on the Symposium of the IAG Subcommission for Europe (EUREF) held in Tromsø/Norway, 21-24 June 2000 (in print).
58. Pany, T., P. Pesec and G. Stangl: “**OLG analysis center activities, standards, problems, new developments,**” Report on the Symposium of the IAG Subcommission for Europe (EUREF) held in Tromsø/Norway, 21-24 June 2000 (in print).
59. Pany, T., P. Pesec and G. Stangl: “**The GPS Campaign CEGRN’99 – Outliers and Problems,**” Reports on Geodesy of Warsaw University of Technology, 2000 (in print).
60. Pany, T., P. Pesec and G. Stangl: “**Report of EUREF Analysis Centre OLG: Exception handling and open questions,**” Paper presented at the EUREF Local Analysis Center Workshop, Warszawa, May, 2001.
61. Pany, T., P. Pesec and G. Stangl: “**Network Monitoring at the OLG Analysis Centre,**” Proceedings of EUREF symposium, Dubrovnik, May 2001.
62. Eissfeller, B., C. Tiberius and T. Pany and R. Biberger and T. Schueler and G. Heinrichs: “**Real-Time Kinematic in the Light of GPS Modernization and Galileo,**” Proceedings of ION-GPS 2001, Salt Lake City.
63. Tiberius C., T. Pany, B. Eissfeller, K. de Jong, P. Joosten and S. Verhagen: “**Integral GPS-Galileo ambiguity resolution,**” Proc. GNSS 2002, Copenhagen, 2002.
64. Eissfeller, B., C. Tiberius, T. Pany, R. Biberger, T. Schueler, G. Heinrichs: “**Instantaneous Ambiguity Resolution for GPS/Galileo RTK Positioning,**” pp. 72-86. in: Proc. of the 9th Saint Petersburg International Conference on Integrated Navigation Systems, Russia, St. Petersburg, 27-29 May, 2002.
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66. Hein, G., T. Pany: “**The European Satellite Navigation System Galileo,**” Japan Konferenz 2002.
67. Hein, G., J. Godet, J.-L. Issler, J.-C. Martin, P. Erhard, R. Lucas-Rodriguez and Tony Pratt: “**Status of Galileo Frequency and Signal Design,**” Proc. ION-GPS 2002, Portland, 2002.

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69. Tiberius, C., T. Pany, B. Eissfeller, P. Joosten, S. Verhagen: **“0.99999999 confidence ambiguity resolution with GPS and Galileo,”** GPS Solutions 6, pp. 96-99, 2002.
70. Joosten, P., T. Pany, J. Winkel: **“The impact of unmodelled multipath on ambiguity resolution,”** Proc. ION-GPS 2002, Portland, 2002.
71. Hein, G., T. Pany: **“Architecture and Signal Design of the European Satellite Navigation System Galileo - Status Dec. 2002,”** Journal of Global Positioning Systems, Vol. 1, No. 2, 2002.
72. Hein, G., T. Pany: **“The European Satellite Navigation System Galileo,”** Wuhan University Journal of Nature Sciences, Vol.8 No.2, 2003.
73. Biberger, R., T. Pany, A. Teuber, G.W. Hein, T. Schüler: **“A Code and Phase Error Model for Pseudolite Signal Reception on top mounted Aircraft Antennas based on Maxwell’s Equations,”** Proc. GNSS 2003, Graz, 2003.
74. Sanromà, D., T. Pany, Bernd Eissfeller and Günter Heinrichs: **“RTK Receiver Design with the L2 Civil Signal, Performance and Improvements with Respect to (Semi-) Codeless Techniques,”** Proc. ION-GPS 2003, Portland, 2003.
75. Biberger, R., A. Teuber, T. Pany, G. Hein: **“Development of an APL Error Model for Precision Approaches and Validation by Flight Experiments,”** Proc. ION-GPS 2003, Portland, 2003.
76. Hein, G., J. Godet, J. Issler, J. Martin, P. Erhard, R. Lucas-Rodriguez and T. Pratt: **“Galileo Frequency and Signal Design,”** GPS World, vol. 14, no. 6, pp. 30-37, June, 2003.
77. Ávila-Rodríguez, J.-A., B. Eissfeller and T. Pany: **“A Theoretical Analysis of Acquisition Algorithms for Indoor Positioning,”** Navitec 2004, Nordwijk, 2004.
78. Schmid, A., et al. (T. Pany): **“A Combined Galileo/GPS Receiver Architecture for Consumer Market Applications,”** Navitec 2004, Nordwijk, 2004.
79. Kaniuth, R., A. Pósfay, T., J. Ávila-Rodríguez, B. Eissfeller: **“Indoor positioning with the ipexSR software receiver,”** Navitec 2004, Nordwijk, 2004.
80. Ávila-Rodríguez, J.-A., M. Irsigler, G. Hein and T. Pany: **“Combined Galileo/GPS Frequency and Signal Performance Analysis,”** Proc. ION-GNSS 2004, Long Beach, 2004.
81. Kaniuth, R., A. Pósfay, T. Pany and B. Eissfeller: **“Positioning With a Software Receiver Under Weak Tracking Conditions With Software Simulated IF-Signals,”** Proc. ION-GNSS 2004, Long Beach, 2004.
82. Schmid, A., A. Neubauer, H. Ehm, R. Weigel, N. Lemke, G. Heinrichs, J. Winkel, J. Ávila-Rodríguez, R. Kaniuth, T. Pany, B. Eissfeller, G. Rohmer, B. Niemann and M. Overbeck: **“Enabling Location Based Services with a Combined Galileo/GPS Receiver Architecture,”** Proc. ION-GNSS 2004, Long Beach, 2004.
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84. Hein, G., J. Ávila-Rodríguez, M. Irsigler and T. Pany: **“Performance of Galileo L1 Signal Candidates,”** Proc. ENC-GNSS 2004, Rotterdam, 2004.
85. Heinrichs, G. et al. (T. Pany): **“HIGAPS – A Large-Scale Integrated Combined Galileo/GPS Chipset for the Consumer Market,”** Proc. ENC-GNSS 2004, Rotterdam, 2004.
86. Wallner, S., G.W. Hein, J.-A. Ávila Rodríguez, T. Pany, A. Pósfay: **“Interference Computations Between GPS and GALILEO,”** Proceedings of the International Technical Meeting of the Institute of Navigation, ION-GNSS 2005, 13-16 September, Long Beach, California, 2005.
87. Pósfay, A., Thomas Pany, Bernd Eissfeller: **“First Results of a GNSS Signal Generator Using a PC and a Digital-to-Analog Converter,”** Proceedings of the International Technical Meeting of the Institute of Navigation, ION-GNSS 2005, 13-16 September, Long Beach, California, 2005.
88. Kaniuth, R. et al. (Pany, T.): **“Single Shot Positioning with the HIGAPS Receiver,”** Proceedings, ENC-GNSS 2005 Munich, Germany, 2005.
89. Lück, T., M. Bodenbach, J. Winkel, T. Pany, D. Sanroma, B. Eissfeller: **“Software versus FPGA based realtime kinematic GNSS,”** Proc. ENC-GNSS 2005, Munich, July, 2005.
90. Ávila-Rodríguez, J.-A., Heiries V., Pany T., Eissfeller B.: **“Theory on Acquisition Algorithms for Indoor Positioning,”** 12th Saint Petersburg International Conference on integrated navigation systems, May 23-25, Saint Petersburg, Russia, 2005.
91. Schmid, A. et al. (Pany, T.): **“Combined Galileo/GPS architecture for enhanced sensitivity reception,”** AEÜ J. Int. Electron. Commun., vol. 51, no. 1, 2004.
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93. Pany, T., Sanromá Güxens, D., Ávila Rodríguez, J. Á., and Eissfeller, B.: **“High Precision Signal Processing in a PC Software Receiver,”** IEEE Aerospace and Electronics Systems Magazine, Vol. 21, No. 8, pp. 20-25, 2006.
94. Won, J.-H., T. Pany, B. Eissfeller: **“Performance Evaluation of a Unified MLE Approach for Tracking Multi-Frequency GNSS Signals,”** Proceedings of the third ESA Workshop on Satellite Navigation User Equipment Technologies – NAVITEC2006, ESTEC, Noordwijk, The Netherlands, Dec. 11-13, 2006.
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98. Ávila-Rodríguez, J.-A., Pany T., Hein G.W.: **“Bounds on Signal Performance Regarding Multipath-Estimating Discriminators,”** Proceedings of the International Technical Meeting of the Institute of Navigation, ION-GNSS 2006, 26-29 September, Fort Worth Convention Center, Fort Worth, Texas, 2006.
99. Hein, G., T. Pany, S. Wallner, Won, J.H.: **“Platforms for a Future GNSS Receiver,”** InsideGNSS, vol. 1, no. 2, 2006, Gibbons Media & Research.
100. Teuber, A. et al. (Pany, T.): **“A Two-Stage Fuzzy Logic Approach for Wireless LAN Indoor Positioning,”** in Proceedings of Position, Location, And Navigation Symposium, 2006 IEEE/ION, pp. 730-738, ISBN: 0-7803-9454-2, April 25-27, , San Diego, 2006.
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103. Heinrichs, G., M. Restle, B. Riedl, T. Pany: **“NavX-NSR - A Novel Galileo/GPS Navigation Software Receiver,”** Proc. ION-GNSS 2007, 25-28 Sept., Fort Worth, 2007.
104. Sicramaz-Ayaz, A., T. Pany, B. Eissfeller: **“Performance of Assisted Acquisition of the L2CL Code in a Multi-frequency Software Receiver,”** Proc. ION-GNSS 2007, 25-28 Sept., Fort Worth, 2007.
105. Won, J.-H., T. Pany, B. Eissfeller: **“Implementation, Verification and Test Results of a MLE-based F-Correlator Method for Multi-Frequency GNSS Signal Trackings,”** Proc. ION-GNSS 2007, 25-28 Sept., Fort Worth, 2007.
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156. Kraus, Thomas, Pany, Thomas, Eissfeller, Bernd, "**Maximum Theoretical Interference Mitigation Capability of a GNSS Receiver as Limited by the GNSS Frontend**," Proceedings of the 30th International Technical Meeting of The Satellite Division of the Institute of Navigation (ION GNSS+ 2017), Portland, Oregon, September 2017, pp. 3471-3480.
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160. Dampf, Jürgen; Pany, Thomas; Bär, Wolfgang; Winkel, Jón; Mervart, Leoš; Ávila-Rodríguez, José-Ángel; Ioannides, Rigas: **Real World Spoofing Trials and Mitigation** . In: InsideGNSS, 12. 2017 , 3

Invited Talks

161. Pany, T.: "**Monitoring und Überwachung von dGPS Korrekturdaten**," dGPS Symposium, TU-Graz, 1. Februar 1999.
162. Pany, T.: "**Wissenschaftliche Aspekte von dGPS**," dGPS Symposium, ORF-Zentrum Wien, 8. Okt. 1999.
163. Pany, T.: "**Instant GPS**," DGPS Workshop in Rottenmann 3. März 2000.
164. Pany, T., P. Pesec: "**Das Österreichische GPS Permanentnetz**," DGPS Workshop in Rottenmann 3. März 2000.
165. Pany, T.: "**Detektion von Indoor-GPS-Signalen mittels eines 'Vector-Delay-Lock-Loop' Navigationsempfängers**," Elektrotechnisches Kolloquium des EEI, Friedrich-Alexander-Universität Erlangen-Nürnberg, Sommersemester 2006.
166. Pany, T.: "**Generic and Advanced GNSS Receiver Techniques**," Communications Satellite Development Group, Electronics & Telecommunications Research Institute (ETRI), Korea, 2007.
167. Pany, T.: "**Schätzmethode in der Navigationssignalverarbeitung**," Elektrotechnisches Kolloquium des EEI, Friedrich-Alexander-Universität Erlangen-Nürnberg, Sommersemester 2009.
168. Pany, T.: „**Status of Precise Positioning under Degraded GNSS Signal Conditions**“, EURATHLON – the European Land Robot Trial, Berchtesgaden, Germany, 2013.

Selected Presentations without Paper

169. Pany, T.: "**EUVN97 Processing Results of the Analysis Center Austria. Special Topic: Baseline Dependence**," IAG EUREF Symposium, Bad Neuenahr/Germany, May 1998.
170. Pany, T., P. Pesec: "**Quality control of RTCM messages in the active Austrian GPS-network**," European Geophysical Society, 24th General Assembly, The Hague, 20. April 1999.
171. Pany, T., P. Pesec and G. Stangl: "**On the Status of Near Real Time Estimation of Tropospheric Zenith Delays and Seasonal Variations of Station Coordinates**," EUREF Analysis Workshop, 9-10 September 1999.
172. Pany, T.: "**Eliminierung von atmosphärischen Artefakten in GPS und interferometrischen SAR-Daten mittels numerischer Wettermodelle**," ASA Seminar: Anwendungen von Satellitenfernerkundungsdaten im Rahmen von ESA- und EUMETSAT- Projekten, TU-Wien, 15. November 1999.
173. Pany, T., P. Pesec and G. Stangl: "**Instant GPS, near real time post processing of GPS data using GPS permanent stations**," 26th General Assembly, Nice, 29 March 2001.
174. Pany, T.: "**Measuring and Modeling the Slant Wet Delay with GPS and the ECMWF NWP Model**," 26th General Assembly, Nice, 27 March 2001.

175. Pany T., M. Irsigler: **“Workshop on Multi-Frequency and Multi-Sensor GNSS Signal Analysis,”** held by IFEN GmbH at the IEEE/ION PLANS in Palm Springs, 2010.
176. Humpfreys, T., T. Pany, B. Riedl, C. Stöber, L. Young and D. Munton: **“Advances in GNSS Equipment,”** IGS Workshop 2010, 28 June – 2 July, Newcastle upon Tyne, 2010.
177. Pany, T., N. Falk, T. Hartmann, G. Heinrichs, B. Riedl, J. Winkel and G. Stangl. **„Integration of COMPASS in a multi-GNSS receiver: frontend design, signal processing issues and results from early operations”**, CSNC 2012, Guangzhou, China, 2012
178. Pany, T. and J. Dampf: **“Robust Positioning and Attitude Determination inside Forest with GNSS”**, Presentation at the AHORN 2014 conference, Graz, Nov. 20-21., 2014.

Selected Poster Presentations

179. Pany, T., P. Pesec: **“Monitoring of the Austrian GPS Stations Array,”** IGS Network Workshop, Annapolis/USA, November 1998.
180. Pany, T., P. Pesec, G. Stangl: **“The Data Analysis Center OLG Austria,”** IGS Network Workshop, Annapolis/USA, November 1998.
181. Pany, T., P. Pesec, G. Stangl: **“Atmospheric GPS slant path delays and ray tracing through numerical weather prediction models, a comparison,”** EGS General Assembly, Nice/France, 25-29 April 2000.
182. Pany, T., P. Pesec, G. Stangl: **“Elimination of tropospheric path delays in GPS observations with the ECMWF numerical weather model,”** COST716 Workshop, 10-12 July, Soria Moria, Oslo, 2000.
183. Pany, T. et al.: **“Status of software receiver technology at University FAF Munich and IFEN GmbH,”** IGS Analysis Center Workshop, 2-6 June, Miami, 2008.