

Bibliography for GNSS Antenna and Receiver Design Considerations for High Accuracy Applications

Modern GNSS Signal Structures

- Ávila Rodríguez, J. A., "On Generalized Signal Waveforms for Satellite Navigation," Doctoral Thesis, Munich, June 2008
http://137.193.32.1/research/docs/phd_Jose_Angel_Avila_Rodriguez.pdf

GNSS Antennas

- Antennas, <http://www.navipedia.net/index.php/Antennas>

GNSS Baseband Signal Processing

- Kaplan, E., and C. Hegarty, editors, "GPS Principles and Applications", 2nd Ed. Artech House, 2006
- Misra, P. and Enge, P., *Global Positioning System – Signals, Measurements, and Performance*, 2nd ed., Ganga-Jamuna Press, Lincoln, MA, 2006.
- Van Dierendonck, "Chapter 8 – GPS Receivers" in "Global Positioning System: Theory and Applications", Vol. 1, edited by B. Parkinson, and J.J. Spilker, American Institute of Aeronautics and Astronautics, Washington, D.C., 1996.

Smartphone and Mass-Market GNSS Receivers

- Van Diggelen, F., *A-GPS: Assisted GPS, GNSS, and SBAS*, Artech House, Boston, 2009.
- Van Diggelen, F., "Who's Your Daddy? Why GPS Will Continue to Dominate Consumer GNSS", *Inside GNSS*, March/April 2014
<http://www.insidegnss.com/node/3927>

Multipath

- Braasch, M. S., "Multipath effects" in *Global Positioning System: Theory and Applications, Vol. 1*, edited by B. Parkinson, and J.J. Spilker, American Institute of Aeronautics and Astronautics, Washington, D.C., 1996
- McGraw, G. A., Braasch, M. S., "GNSS Multipath Mitigation Using Gated and High Resolution Correlator Concepts," *Proceedings of the 1999 National Technical Meeting of The Institute of Navigation*, San Diego, CA, January 1999, pp. 333–342

Front-End Component Effects

- Keith, J., "Multipath Errors Induced by Electronic Components in Receiver Hardware," M.S. Thesis, Ohio university, November 2002
- Gunawardena, S., and Van Graas, F., "Analysis of GPS-SPS Inter-PRN Pseudorange Biases due to Receiver Front-End Components," *Proceedings of the 27th International Technical Meeting of The Satellite Division of the Institute of Navigation (ION GNSS+ 2014)*, Tampa, Florida, September 2014, pp. 2611-2624

Signal Deformation

- Hauschild, A., Montenbruck, O., Thöler, S., Erker, S., Meurer, M., Ashjaee, J., “A Multi-Technique Approach for Characterizing the SVN 49 Signal Anomaly: Part 1 - Receiver Tracking and IQ Constellation,” *GPS Solutions*, January 2012, Volume 16, Issue 1, pp 19–28
- Thöler, S., Meurer, M., Erker, S., Montenbruck, O., Hauschild, A., Fenton, P., “A Multi-Technique Approach for Characterizing the SVN49 Signal Anomaly, Part 2: Chip Shape Analysis,” *GPS Solutions*, January 2012, Volume 16, Issue 1, pp 29–39
- Brenner, M., Liu, F., Class, K., Reuter, R., and Enge, P., “Natural Signal Deformations Observed in New Satellites and their Impact on GBAS,” *Proceedings of the 22nd International Technical Meeting of The Satellite Division of the Institute of Navigation (ION GNSS 2009)*, Savannah, GA, September 2009, pp. 1100–1111
- Gunawardena, S., and van Graas, F., "An Empirical Model for Computing GPS SPS Pseudorange Natural Biases Based on High Fidelity Measurements from a Software Receiver," *Proceedings of the 26th International Technical Meeting of The Satellite Division of the Institute of Navigation (ION GNSS+ 2013)*, Nashville, TN, September 2013, pp. 1341-1358
- Gunawardena, S., and van Graas, F., “High Fidelity Chip Shape Analysis of GNSS Signals using a Wideband Software Receiver,” *Proceedings of the 25th International Technical Meeting of The Satellite Division of the Institute of Navigation (ION GNSS 2012)*, Nashville, TN, September 2012, pp. 874-883
- Pini, M., Akos, D. M., Esterhuizen, S., and Mitelman, A., “Analysis of GNSS Signals as Observed via a High Gain Parabolic Antenna,” *Proceedings of the 18th International Technical Meeting of the Satellite Division of The Institute of Navigation (ION GNSS 2005)*, Long Beach, CA, September 2005, pp. 1686-1695.
- Wong, G., “Impact of Nominal Signal Deformations on Satellite Navigation Systems,” Ph.D. Dissertation, Stanford University, June 2014
<http://gps.stanford.edu/papers/Thesis/GabrielWongThesis14.pdf>

ChipShape Processing

- Weill, L. R., “Theory and Applications of Signal Compression in GNSS Receivers,” ION GNSS 2007, Fort Worth, TX, Sept 2007.
- Fenton, P. C., and Jones, J., “The Theory and Performance of NovAtel Inc.'s Vision Correlator,” ION GNSS 2005, Long Beach, CA, Sept 2005
- Gunawardena, S., “A Universal Software Receiver Toolbox for Education and Research,” *Inside GNSS*, July/August 2014

Additional Resources for Software requirements for GNSS precise positioning

- Chassagne, O., “One-centimeter accuracy with PPP,” *Inside GNSS* magazine, March/April 2012 <http://www.insidegnss.com/node/2977>
- Bisnath, S. and Y. Gao, (2009), “Current state of Precise Point Positioning and future prospects and limitations,” In (Ed.) M. Sideris, *International Association of Geodesy Symposia, Observing our Changing Earth*, 589 p., 133: 615-624

- de Jonge, P.J. and C.C.J.M. Tiberius (1996), "The LAMBDA method for integer ambiguity estimation: implementation aspects," Delft Geodetic Computing Center LGR series, No. 12
- Hernandez-Parjares, M., "Wide-area RTK," *Inside GNSS* magazine, March/April 2010 <http://www.insidegnss.com/node/1917>
- Hofmann-Wellenhof, B., H. Lichtenegger and J. Collins (2001), *Global Positioning System, Theory and Practice*, 5th Edition, Springer-Verlag, Wien, 382 p.
- Kislig, L., "What is a virtual reference station and how does it work?," *Inside GNSS* magazine, July/August 2011, <http://www.insidegnss.com/node/2687>.
- Kouba, J., and P. Héroux, (2001), "Precise Point Positioning using IGS orbit and clock products," *GPS Solutions*, 5(2): 12-28
- Lachapelle, G., and M. Petovello, Y. Gao, and L.J. Garin, "Precise Point Positioning and its challenges, aided-GNSS and signal tracking," *Inside GNSS* magazine, November/December 2006, <http://www.insidegnss.com/node/282>
- Landau, H., X. Chen, S. Klose, R. Leandro, and U. Vollath (2007), "Trimble's RTK and DGPS solutions in comparison with Precise Point Positioning," in M.G. Sideris (ed.), *Observing Our Changing Earth*, International Association of Geodesy Symposia 133: 709-718
- Leick, A. (2004), *GPS Satellite Surveying*, 3rd Ed., John Wiley and Sons, Inc., Hoboken, NJ, 435 p.
- Petovello, M., and P. Dabove, and M. de Agostino, "Network RTK and reference station configuration," *Inside GNSS* magazine, November/December 2011, <http://www.insidegnss.com/node/2840>
- Petovello, M., and P. Dabove, A. Manzano, and C. Taglioretti, "Network Real Time Kinematic GPS," *Inside GNSS* magazine, September/October 2013, <http://www.insidegnss.com/node/3686>
- Teunissen, P.J.G., and A. Kleusberg (1998), *GPS for Geodesy*. Springer, Berlin, 650 p.
- Van der Marel, H. and P.F. de Bakker (2012). "Single- versus dual-frequency Precise Point Positioning," *Inside GNSS* magazine, July/August 2013, <http://www.insidegnss.com/node/3125>
- Zumberge, J.F., M.B. Heflin, D.C. Jefferson, M.M. Watkins and F.H. Webb (1997), "Precise Point Positioning for the efficient and robust analysis of GPS data from large networks," *J. of Geophysical Research*, 102: 5005-5017