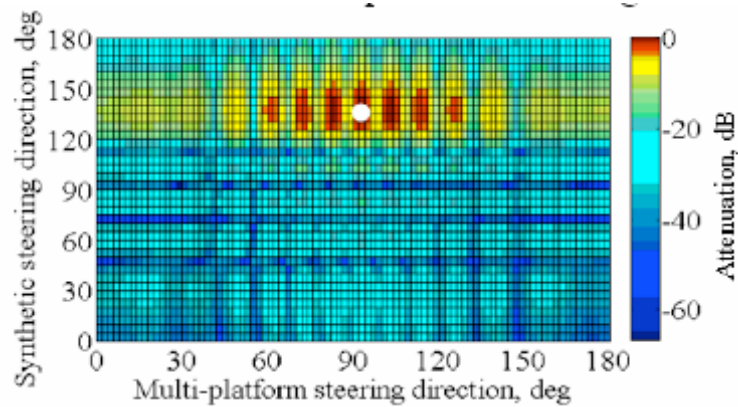


Synthetic Aperture GPS Signal Processing

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Sponsor: Federal Aviation Administration (FAA)



GPS SAR Beam Using Multi-Platform Phased Array Processing [2]

GPS signals are processed using Synthetic Aperture Radar (SAR) techniques. SAR processing uses the motion of the platform to synthesize a larger antenna array. The larger array can be used for narrow beam forming and nulling to mitigate interference and jamming. A Fast Fourier Transform (FFT) is used to simultaneously steer synthetic array beams in multiple directions, corresponding to each of the GPS satellites.

Further reading: [1] Soloviev, A., Van Graas, F., Gunawardena, S. and M. Miller, "Synthetic Aperture GPS Signal Processing: Concept and Feasibility Demonstration, Proceedings of the International Technical Meeting of the ION, Anaheim, CA, January 2009. [2] Soloviev, A. and S. Gunawardena, "Synthetic Aperture GPS Signal Processing for Multi-Platform Antenna Configuration, Proceedings of ION GNSS, September 2009.