



## Design and Validation of an Accurate GPS Signal and Receiver Truth Model for Comparing Advanced Receiver Processing Techniques

By Phillip M. Corbell

Biblioscholar Nov 2012, 2012. Taschenbuch. Book Condition: Neu. 246x189x14 mm. This item is printed on demand - Print on Demand Neuware - Recent increases in the computational power of computers and digital signal processors have made possible new, novel signal tracking techniques in GPS receivers. One such technique is known as Direct Correlator Output Processing (DCOP). This technique replaces individual traditional tracking loops with a single Kalman Filter, which jointly processes the received signals while exploiting their correlated noises. DCOP is innovative in its potential to replace the tried and true classical signal tracking loops. It is also an enabling technology for ultra-tightly coupled GPS/INS (Global Positioning System/Inertial Navigation System). Potential benefits of these new tracking techniques include an order-of-magnitude improvement in positional accuracy in environments of jamming and high dynamics. However, such performance gains are typically based on software simulations of conceptual GPS receiver designs, not working prototypes. Simulating these new designs requires the modeling of GPS signals and receiver tracking loops, instead of the traditional pseudorange and carrier-phase measurements, which many proven GPS simulation software packages accurately model. 230 pp. Englisch.



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