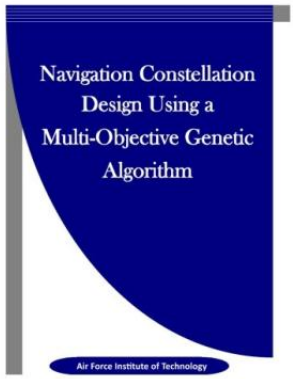

Navigation Constellation Design Using a Multi-Objective Genetic Algorithm (Paperback)

By Air Force Institute of Technology

Createspace Independent Publishing Platform, United States, 2016. Paperback. Condition: New. Language: English . Brand New Book ***** Print on Demand *****.The Global Positioning System (GPS) has become an important asset in the lives of civilians and defense organizations. GPS uses include positioning, navigation, timing, as well as many other daily applications. With such dependence, protection against attacks on the system is paramount to continue its effectiveness. Attacks on its signal is the easiest way for enemies to degrade and harm not only everyday functioning for civilians, but a nations defense as well. Jamming interference and spoofing are the two most frequent attacks on GPS signals. Could these two attacks cause significant effect on military operations? We use a System Effectiveness Analysis Simulation (SEAS) model to emulate a special operation force (SOF) using GPS recovering a weapon of mass destruction (WMD) against an opposing military in an urban canyon environment. Simulating jamming (modeled as availability and accuracy) and spoofing (modeled as timeliness) of the GPS satellites signal produces a greater understanding of its impact on this type of operation. Statistical analysis determined the significance of these types of attacks on several responses for this simulation. Our results include a designed experiment...

Reviews

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