Signal Correction for Environmental Distortion

CASE ID: UA 268-14

BACKGROUND

Random fluctuations in amplitude and phase of a signal wave may occur during propagation through inhomogeneous, random media, which can negatively impact radar performance.

DESCRIPTION

University researchers have developed software and systems that correct environmental wavefront distortion such as time-varying phase and amplitude fluctuations across radar apertures using adaptive correction factors. The algorithm is applied on a per range gate basis to compensate for propagation path dependent environmental distortion such as scintillation observed by phased array radar. The algorithm has achieved a reduction in observed S4 index and phase standard deviation on the order of [2,5] while providing an order of magnitude increase in angular resolution and increases in array gain.

ADVANTAGES

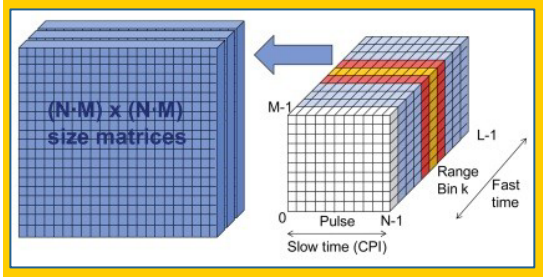
- Corrects signals for environmental distortion
- Increases angular resolution and array gain

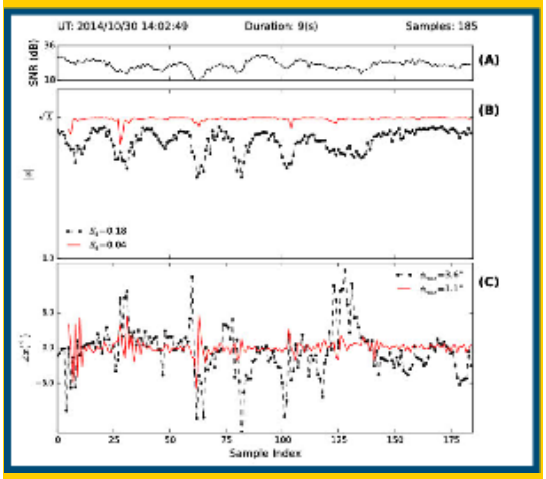
APPLICATIONS

- Security and military operations
- GPS applications

INTELLECTUAL PROPERTY

- US Patent No. 10,571,550
- Issued February 25, 2020





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