



remote sensing



Special Issue Reprint

Bistatic HF Radar

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The proliferation of HF radar systems for ocean remote sensing and maritime surveillance continues apace, with hundreds of such radars now deployed around the world. The overwhelming majority of these radars operate in the conventional monostatic configuration, with the transmitting and receiving systems collocated or closely spaced; this simple geometry has obvious advantages in terms of cost, siting requirements, communications, maintenance, signal processing, and echo interpretation, and it has been adopted by HF radars exploiting line-of-sight, surface wave, and skywave propagation modalities. All these considerations notwithstanding, in some circumstances there can be compelling reasons to implement bistatic configurations, defined as geometries in which the separation between transmitter and receiver is comparable with the range to the zones being interrogated. Factors that can drive this decision include energy budget, desire to exploit hybrid propagation modes, scattering characteristics of the targets of interest, properties of the clutter, survivability, and covertness. This book, a compilation of papers by leading researchers in the field, offers a panoramic account of the state of the art in bistatic HF radar. Topics covered include system design, HF propagation and scattering, signal processing, echo interpretation, and applications in the maritime domain. Supported with extensive references to the literature, this book should serve as an essential source for practitioners keen to expand the capabilities of their HF radar systems.



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