1. Record Nr. UNINA9910437903203321

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Titolo	Methods of signal processing for adaptive antenna arrays / / Larysa Titarenko and Alexander Barkalov
Pubbl/distr/stampa	Berlin ; ; Heidleberg, : Springer-Verlag, 2012, c2013
ISBN	9786613944177 9781283631723 1283631725 9783642321320 3642321321
Edizione	[1st ed. 2013.]
Descrizione fisica	1 online resource (233 p.)
Collana	Signals and communication technology ; ; 6
Altri autori (Persone)	BarkalovAlexander
Disciplina	621.382/4 621.3822
Soggetti	Signal processing Adaptive antennas
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Description based upon print version of record.
Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	Title; Acknowledgements; Abbreviations; Introduction; General Characteristic of Methods for STSP; Analysis of Methods of Nonadaptive Spatial Signal Processing; Analysis of Peculiarities of Adaptive Spatial Signal Processing; Analysis of Non-structural Methods of Adaptive STSP; Analysis of Classical Structural Methods of Adaptive STSP; References; Background of Classical Theory of ASSP; Analysis of Typical Description of Signal-Noise Situation; Introduction into System of Criteria of Optimality; Analysis of Algorithms of Adaptive Space-Time Signal Processing; References Features of ASSP under Different Levels of A-Priori UncertaintyAnalysis of Peculiarities of ASSP with Different Levels of A-Priori Uncertainty; Nature of a Priori Uncertainty about Properties of Signal and Noise; Methods of SSP under Generalized Parametric Uncertainty about the Noise Properties; Methods of SP under a Priory Parametric Uncertainty about Properties of Useful Signal; References; Algorithms of ASSP with Not Exactly Known Parameters; Main Approaches for Development of Algorithms of ASSP with Not Exactly Known Parameters

Probabilistic Approach for Synthesis of Robust Algorithms of ASSPDeterministic Approach: Robust Algorithms of ASSP for Modified Optimization Tasks; Restrictions for Value of Arbitrary Directivity Characteristic of Antenna; Additional Linear Restrictions; Restrictions of Standard Deviation for Directivity Characteristic of AA from the Given Value; Correlative Restrictions; Restrictions for the Shape of Amplitude-Phase Distribution of Currents in Channels of AA; Restriction for Value of Modulus of Output Signal of AA; Restrictions for Value of Norm ofWeight Coefficients
Peculiarities of Robustnization for Algorithms of ASSPApproximation of Control Vector by Section of Taylor Series; Projection Approach; Robustnization of ASSP Algorithms Using Nonlinear Transformations of Input Signals; Restrictions of Existed Methods of ASPS with Not Exactly Known Parameters; References; Background of ASSP with Not Exactly Known Parameters; Elements of Axiomatic and Some Analogies; Generalized Linear Systems of Rayleigh and Centrosymmetric Matrices; Algorithms of ASF Basing on Operators' Construction in Banach Space; Methods of Construction of Operators
Minimax Approach for Operator's Construction and Principle of ComparisonAdaptive Approach for Construction of Operators; Optimization Tasks with Squared Restrictions of the Unstrict Inequalities Type; Construction of Optimization Tasks with Mixed Restrictions; Construction of Optimization Tasks with Generalized Mixed Restrictions; Conclusion; References; Synthesis of ASF Algorithms for Not Exactly Known Parameters; Synthesis of Minimax Algorithms; Synthesis of Adaptive Algorithms; Synthesis of Algorithms for Adaptation of Structures of Operators to Current SIE
Analysis of Quality for ASF Algorithms for Signals with Not Exactly Known Parameters

Sommario/riassunto

So far there does not exist any theory of adaptive spatial signal processing (ASSP) for signals with uncertain parameters. This monograph is devoted to the development of this theory, which is very important in connection with wide spreading of telecommunications and radio links in the modern society. This theory can be applied for the development of effective radio communications. In the book some original approaches are proposed targeting the development of effective algorithms of ASSP with not exactly known parameters. They include both probabilistic and deterministic approaches for synthesis of robust algorithms of ASSP. The solution of problems also can be reduced to the construction of some operators for the Banach space which is presented in the book. “Methods of Signal Processing for Adaptive Antenna Arrays” targets professionals, students and PhD students in the area of telecommunications and should be useful for everybody connected with the new information technologies.