

TABLE OF CONTENTS

PLENARY INVITED

01. PHASE OPTIMIZATION PROBLEMS IN ANTENNA SYNTHESIS THEORY B. Z. Katsenelenbaum, N. N. Voitovich, V. V. Semenov, R. B. Vaganov, P.O. Savenko, M. I. Andriychuk, Yu. N. Kazantsev, Yu. P. Tkachuk, A. N. Sivov, A. D. Shatrov, E. N. Korshunova, O. F. Zamorska, S. A. Yaroshko, V. J. Anokhin, O. M. Gis, Yu. P. Topolyuk, O. O. Bulatsyk, M. D. Tkach	22
02. RAPIDLY CONVERGENT “SUPERRESOLVING” DIRECTION FINDERS OF NOISE RADIATION SOURCES IN ADAPTIVE ARRAYS D. I. Lekhovytskiy, Y. S. Shifrin, D. V. Atamanskiy	28
03. RADIATION AND MATCHING CHARACTERISTICS OF PHASE ARRAY ANTENNAS BUILT OF PRINTED QUASI-YAGI RADIATING ELEMENTS F. F. Dubrovka, O. E. Vydarko, V. I. Gouz, V. P. Lipatov, A. V. Butyrin	34
04. ELECTRODYNAMIC ANALYSIS OF OPTICAL NANOPLASMONIC STRUCTURES A. M. Lerer	40
05. CIRCULAR POLARIZATION SPLITTERS FOR THREE-BAND FEED OF RADIOTELESCOPE REFLECTOR ANTENNA V. N. Skresanov, V. V. Glamazdin, A. A. Kirilenko, D. Yu. Kulik, M. P. Natarov, O. M. Pylypenko, L. A. Rud, A. I. Shubnyj, V. A. Zolotarev	43
06. SYNTHESIS OF QUASI-STATIONARY INHOMOGENEOUS IMPEDANCE PLANE Y. V. Yukhanov, T. Y. Privalova, A. Y. Yukhanov	49
07. STATISTICAL SIMULATION OF RANDOM ANTENNAS LIKE DEVELOPMENT OF THE STATISTICAL ANTENNA THEORY O. N. Maslov, A. S. Rakov, A. A. Silkin	53
08. SERGEY ALEKSANDROVICH SCHELKUNOFF AND HIS CONTRIBUTION TO APPLIED ELECTRODYNAMICS AND THE THEORY OF ANTENNAS O. N. Maslov, A. V. Ryabushkin	59
09. THE BASE OF FRACTAL ANTENNA THEORY AND APPLICATIONS: UTILIZING IN ELECTRONIC DEVICES A. A. Potapov	62
10. SATELLITE PASSIVE MICROWAVE RADIOMETRY FROM BEGINNING TO THE CONTEMPORARY INVESTIGATIONS V. V. Melentyev	68

11. DEVELOPMENT OF THE THEORY, METHODS AND ALGORITHMS FOR OPTIMAL WIDE- AND ULTRAWIDEBAND SPATIOTEMPORAL SIGNAL PROCESSING OF RADIO-THERMAL RADIATION	
V. K. Volosyuk, V. F .Kravchenko, V. V. Pavlikov.....	74
12. THE STIMULATING AND INACTIVATE EFFECTS OF MICROWAVE PROCESSING OF PLANT SEEDS AND ASSOCIATED THEM MICROFLORA AND MICROORGANISMS	
G.A. Morozov, N.Ye. Stakhova, Ya.N. Shangaraeva	80
13. ADJOINT OPERATOR METHOD AND ITS ASPECTSIN REGARD TO ANTENNA SYNTHESIS	
Yu. I. Choni	86
14. DEVELOPMENT OF THE THEORY OF NANOANTENNAS BASED ON MODULATED PLASMON-POLARITON STRUCTURES	
V. V. Hoblyk	92
15. SIGNAL COHERENCE AND COHERENCE-INDUCED EFFECTS ON ARRAY OUTPUT IN MULTIMODE TRANSMISSION CHANNELS	
A. I. Malekhanov, A.V. Smirnov	98
16. RECENT ADVANCES IN TERAHERTZ SCIENCE AT QUEEN MARY UNIVERSITY OF LONDON	
R. F. Dubrovka, O. Y. Sushko, T. M. Loftus, B. Yang and K. Shala, R. S. Donnan	103

GENERAL ANTENNA THEORYAND ELECTROMAGNETIC FIELD

1. METHODS OF IRRADIATION COMPENSATION IN WIDE FREQUENCY BAND <i>(invited paper)</i>	
B.M. Levin	108
2. TRANSITION FROM THE PARABOLIC PROBLEM TO THE FLAT ONE AND PHANTOM <i>(invited paper)</i>	
B.M. Levin	111
3. THEORETICAL RESEARCH OF RESONANT CHARACTERISTICS OF METAL-DIELECTRIC DIFFRACTION GRATINGS	
E. A. Tsvetyansky.....	114
4. THE METHOD OF SYNTHESIS OF ANTENNA WITH ACTIVE ELEMENTS	
V.P. Bunakov, A.A. Golovin, V.I. Rudakov.....	117
5. MICROWAVE RADIATION OF THE COLUMN OF ISOTROPIC AND MAGNETIZED PLASMA	
Yu.V. Kirichenko, Yu.F. Lonin, I.N. Onishchenko.....	120

6. RADIATION FIELDS OF RADIAL IMPEDANCE MONOPOLE MOUNTED ON A PERFECTLY CONDUCTING SPHERE	
D.Yu. Penkin, V.A. Katrich, V.M. Dakhov, M.V. Nesterenko, S.L. Berdnik.....	123
7. SYNTHESIS OF PLANE RADIATING SYSTEMS ACCORDING TO THE PRESCRIBED POWER RADIATION PATTERN (<i>invited paper</i>)	
M.I. Andriychuk, V.F. Kravchenko, P.O. Savenko, M.D. Tkach.....	126
8. ELECTRODYNAMICS BASIC AND DUALITY PRINCIPLE	
A.M. Ivanitckiy.....	133
9. FIELD SYMMETRY, REFLECTED IN THE DESIGN OF ANTENNAS	
L.D. Nechaj.....	135
10. NATURE OF EXTRAORDINARY TRANSMISSION THROUGH A METAL SCREEN SLIT FILLED WITH A METAMATERIAL	
M.I. Panov, A.A. Shmat'ko.....	137
11. MULTIFREQUENCY DIAGNOSTICS OF INHOMOGENEOUS MEDIA	
K.P. Gaikovich, Ye.S. Maksimovitch, V.A. Badeev.....	140
12. COMPUTATIONAL MODEL OF MICROCOPLANAR STRIP ANTENNAS	
N.A. Sivozalizov.....	143
13. SECONDARY EMISSION CHARACTERISTICS OF RESONANT PERFECTLY CONDUCTING OBJECTS OF SIMPLE SHAPE	
G.S. Zalevsky, O.I. Sukharevsky.....	145
14. THE FREQUENCY-ENERGY AND SPATIAL CHARACTERISTICS OF THE COAXIAL-SLOT ARRAY	
V.A. Katrich, V.A. Lyashchenko, N.V. Medvedev.....	148
15. METHOD FOR THE APPROXIMATE SIMULATION OF COMPLEX LARGE-SCALE STRUCTURES	
Yu. F. Zinkovskiy, Yu. K. Sydoryk, A. O. Turovskiy	151
16. RADIATION PATTERNS OF ANTENNAS BEYOND LINE-OF-SIGHT AND ERRORS OF TRANSMITTER POSITION FINDING IN MULTISTATIC SYSTEMS	
O.L. Shilyaeva, V.A. Petrov, V.N. Tkachenko, V.V. Korotkov, E.K. Pozdnyakov.....	154
17. THIN-WIRE COUPLING ELEMENT OF ADJACENT ELECTRODYNAMIC VOLUMES	
L. P. Yatsuk, A.A. Vusik.....	157
18. OPTIMIZATION OF PARAMETERS OF RESONANCE SYSTEM BASED ON TRANSVERSE SLOTS IN THE RECTANGULAR WAVEGUIDE WITH SLOW-WAVE STRUCTURE	
N.K. Blinova, L.P. Yatsuk.....	160

19. VIRTUAL LABORATORY WORKSHOP “MICROWAVE ANTENNAS AND CIRCUITS”	
D.S. Gubsky, V.V. Zemlyakov, I.V. Mamay, G.P. Sinyavsky.....	163
20. APPLICATION OF ANTENNA THEORY WITH NONLINEAR ELEMENTS FOR MIMO ANALYSIS	
J.V. Vishniakova,A.I. Luchaninov.....	166
21. THE INFLUENCE OF ANTENNA CHARACTERISTICS ON INFORMATION REDUNDANCY OF COMMUNICATION CHANNEL	
V.G. Kozlov, A.A. Kravchenco,V.I. Rudakov.....	169
22. RESEARCH RESULTS OF THE IMPACT OF SPATIAL AND POLARIZATION VALUE OF THE ANTENNAS ON NETWORK CAPACITY OF WIRELESS CHANNELS STANDARD IEEE 802.11	
V.M. Astapenya, V.Yu. Sokolov	172
23. MODEL TIME-FREQUENCY RESOURCE ALLOCATION WIMAX AIMED AT IMPROVING THE ELECTROMAGNETIC COMPATIBILITY	
A.V. Lemeshko, S.V. Garkusha.....	175
24. EFFECT OF ANTENNA MUTUAL COUPLING ON MIMO CHANNEL CAPACITY	
V.G. Lykhograi,A.A. Shcherbina, V.S. Vovchenko, Nooh Taha Nasif.....	178
25. EXPERIMENTAL AND THEORETICAL STUDIES OF OPTIC – NEAR-IR ANTENNAS BASED ON ZNO-NANOROD ARRAYS WITH AG-FILM COVERING	
E.M. Kaidashev, N.V. Lyanguzov, A.M. Lerer, E.A. Raspopova.....	181
26. THEORETICAL INVESTIGATION OF PLASMONIC NANOWAVEGUIDE STRUCTURES AND PHOTONIC CRYSTALS	
A.M. Lerer, I.V. Donets, G.A. Kalinchenko, P.V. Mahno.....	184
27. EFFECT OF TIME INTERVALS RANDOM ERRORS ON TIME-MODULATED ANTENNA PARAMETERS	
O. Yurtsev, N. Naumovich, A. Yubko.....	187
28. RADAR TOMOGRAPHY USING NOISE WAVEFORM, ANTENNA WITH BEAM SYNTHESIS AND MIMO PRINCIPLE	
K.A. Lukin, P.L. Vyplavin, V.V. Kudriashov, V.P. Palamarchuk, P.G. Sushenko, N.K. Zaets.....	190
29. MICROWAVE SLOT ANTENNA BASED ON ASYMMETRICAL RIDGED WAVEGUIDE	
V.V. Zemlyakov, G.F. Zargano, A.A. Gadzieva, S.V. Krutiev.....	193
30. CALCULATING ANTENNA CHARACTERISTICS WITHIN THE FRAMEWORK OF WAVEGUIDE REPRESENTATION OF HF ELECTROMAGNETIC FIELD	
V.V. Khakhinov	196

31. ELECTROMAGNETIC LATTICE “INVISIBILITY” OF THE RESONANCE CUBIC CRYSTAL MADE OF MAGNETODIELECTRIC SPHERES A.I. Kozar.....	199
32. SCATTERING OF MIG-29 ANTENNA WITH DIELECTRIC RADOME O.I. Sukharevsky, V.A. Vasilets.....	202
33. REPRESENTATION OF FRAGMENT OF ANTENNA RADIATION FIELD BY LOCAL SPECTRUM OF PLANE WAVES USING PARAMETRIC SPECTRAL ANALYSIS M.V. Andreev, V.F. Borulko.....	205
34. ON PLASMA ANTENNAS (STATE-OF-THE-ART, ACTUAL PROBLEMS, SOME RESULTS) (<i>invited paper</i>) V.V. Ovsyanikov, S.V. Buharov.....	208
35. PLASMA ANTENNAS BASED ON UHF DISCHARGE (<i>invited paper</i>) O.B. Dement'eva.....	211
36. ADAPTIVE FILTERING ALGORITHMS WITH QUATRATIZED COST FUNCTION FOR LINEARLY CONSTRAINED ARRAYS (<i>invited paper</i>) V.I. Djigan.....	214
37. ADVANTAGES OF MULTI-LOOK SAR PROCESSING D. M. Vavriv, O.O. Bezvesilniy.....	217
38. DEVELOPMENT OF THE PLANAR LOW-VOLTAGE CYCLOTRON RESONANCE MASER WITH A SHEET HELICAL ELECTRON BEAM S.A. Kishko, S.S. Ponomarenko, A.N. Kuleshov, B.P. Yefimov.....	220
39. TRANSITION RADIATION OF A RELATIVISTIC POINT CHARGE ON THE TRANSVERSE ORIENTATION LINEAR ANTENNA S.D. Prijmenko.....	223

ANTENNA ARRAYS, ADAPTIVE AND SMART ANTENNAS

1. METHOD OF SYNTHESIS DIRECTIONAL PATTERNS OF PHASED ANTENNA ARRAY WITH ARBITRARY SHAPE CONTOUR APERTURE G.P. Sinyavsky.....	226
2. ENHANCED ALGORITHMS FOR COMMUNICATION OR NAVIGATION ADAPTIVE ANTENNA ARRAYS Yu.I. Choni.....	229
3. EFFECTIVENESS OF USING NON-COUPLED LARGE-APERTURE RADIATORS IN PHASED ARRAY ANTENNAS S. P. Skobelev.....	232

4. LINEAR MICROSTRIP ARRAY WITH SERIAL EXCITATION: NUMERICAL MODELING AND EXPERIMENT	
Yu.Y. Bobkov, I.F. Shalyapin.....	235
5. X-BAND SUBSTRATE INTEGRATED WAVEGUIDE ANTENNA ARRAYS	
Yu.Y. Bobkov.....	238
6. MODELING OF THE CHARACTERISTICS OF THE WAVEGUIDE PHASED ARRAY WITH FREQUENCY-SELECTIVE SHIELD	
Yu.V. Yukhanov, A.I. Semenikhin, D.V. Semenikhina	241
7. ELECTRODYNAMIC ANALYSIS OF DISK NANOARRAYS	
E.V. Golovacheva, I.N. Ivanova, I.A. Kazmin.....	244
8. MAXIMUM LIKELIHOOD ESTIMATION OF BROADBAND NOISE SOURCE LOCATION FOR UNKNOWN SIGNAL AND NOISE POWER SPECTRAL DENSITIES	
V. I. Turchin.....	246
9. ARRAY SIGNAL PROCESSING BASED ON INTERFERENCE MODEL WITH INCOMPLETE CORRELATION MATRIX	
A.A. Rodionov, V.I. Turchin.....	249
10. THE COMPACT LINEAR ANTENNA ARRAY SYSTEM OF THE SHORT-WAVE BAND CONSISTING OF "BUTTERFLY" RADIATORS	
V.P. Kudzin, V.N. Lozovsky, N.I. Shlyk.....	252
11. A NOVEL LENS-INTEGRATED DIRECT DETECTION LINEAR ANTENNA ARRAY WITH NARROW-GAP HOT-CARRIER BOLOMETERS FOR MM-WAVE IMAGING	
F. F. Dubrovka, D. S. Krasilnikov, F.F. Sizov, V.A. Petriakov.....	254
12. ANTENNA ARRAYS: WAVEGUIDE LAYOUT DESIGNING AUTOMATION	
R.R. Anamova.....	258
13. CURVED ANTENNA ARRAY FOR APPLICATION TO MOBILE COMMUNICATION SYSTEMS	
Protsenko M.B., Rozhnovskiy M.V., Bannykh P., Kobylinskyi O., Iaremenko A.A.	261
14. THE FORMATION OF ZERO LEVELS OF RADIATION PATTERN LINER ANTENNAS ARRAY WITH MINIMUM QUALITY OF CONTROLLING ELEMENTS	
V.M. Koshevoy, A.A. Shershnova.....	264
15. SIGNAL ESTIMATION IN THE PRESENCE OF THE STEERING VECTOR UNCERTAINTIES (<i>invited paper</i>)	
A.A. Monakov	266

16. MUTUAL COUPLING BETWEEN ANTENNAS USED AS ARRAY ELEMENTS FOR A LOW FREQUENCY RADIO TELESCOPE P.L. Tokarsky, S.N. Yerin.....	269
17. GENERALIZED FORMULA FOR PHASE SYNTHESIS OF PHASED ARRAY SECTOR BEAMS A.N. Gribanov, A.N. Titov, G.F. Moseychuk, S.E. Gavrilova.....	273
18. THE INFLUENCE OF THE SCREEN ON THE CHARACTERISTICS OF OMNIDIRECTIONAL RADIATORS AND RAREFIED ARRAYS N.N. Gorobets, A.A. Bulgakova.....	277
19. BEAMSPACE ROOT ESTIMATOR BANK FOR DOA ESTIMATION WITH AN IMPROVED THRESHOLD PERFORMANCE V.I. Vasylyshyn.....	280
20. ROBUST ESTIMATION OF RADIATION SOURCES IN AN ARRAY OF ELECTRIC DIPOLES S.M. Vovk, V.F. Borulko.....	283
21. MULTIELEMENT PATCH ANTENNA ARRAY WITH OPERATED POLARIZATION OF KU-BAND V.V. Golovin, Y.N. Tyschuk.....	286
22. THE CIRCUIT DESIGN OF EXCITATION OF THE 144 ELEMENT PATCH ANTENNA ARRAY WITH OPERATED POLARIZATION V.V. Golovin, Y.N. Tyschuk.....	289
23. LINEAR ANTENNA ARRAY OF DIPOLE SERIES-FED ANTENNAS, WITH SECTOR AND ISOTROPIC RADIATED PATTERN IN THE MAGNETIC PLANE G. Ptashinsky.....	292
24. LINEAR ARRAY LOOP ANTENNA WITH SERIES EXCITATION, WITH SECTOR-SHAPED AND ISOTROPIC DIRECTIONAL PATTERN IN ELECTRIC PLANE G. Ptashinsky.....	295
25. OPTIMAL RESTORATION OF RADIOMETRIC IMAGES IN ULTRA WIDEBAND RADIOMETRIC SYSTEMS WITH MULTI-ANTENNA ARRAY V.V. Pavlikov.....	298
26. STATISTICAL SYNTHESIS OF CHOPPER SCANNING RADIOMETERS V.K. Volosyuk, V.V. Pavlikov, S.S. Zhyla.....	301
27. CONVERGENCE RATE OF A NUMBER OF SIGNAL PROCESSING ALGORITHMS IN ADAPTIVE ARRAYS V.P. Ryabukha, A.I. Dokhov, V.I. Zarytskiy, D.S. Rachkov, A.V. Semeniaka, Ie. A. Katiushin, V.V. Zarytskaia.....	304

28. PARAMETRIC ACOUSTIC ANTENNA FOR NOISE-PROOF PULSE SODAR Y.N. Ulianov, V.S. Skvortsov, V.I. Vetrov, V.L. Misailov, N.G. Maksimova.....	307
29. METHOD OF CALCULATION CYLINDRICAL ARRAY AT FORMING OF ULTRASHORT SPATIO-TEMPORAL SIGNAL A.V. Irkha, A.V. Bezverkhy, G.V. Yermakov.....	310
30. THE PRINTED LEAKY-WAVE ARRAY D.N. Borisov, A.I. Klimov, Yu.B. Nechaev.....	313
31. ON THE MAXIMUM DIRECTIVITY OF SURFACE WAVE ALONG THE IMPEDANCE FLANGE OF FINITE ARRAY OF PLANE WAVEGUIDES V.V. Scherbinin, K.S. Bakhtinova.....	316
32. ESTIMATION OF CONTINUOUS ENERGY SPECTRA OF RANDOM ECHOES IN COHERENT PULSE RADAR D.S. Rachkov, A.V. Semeniaka, D.I. Lekhovytskiy, D.V. Atamanskiy.....	319

ULTRA-WIDEBAND, BROADBAND AND MULTI-FREQUENCY ANTENNAS

1. A NOVEL DESIGN OF ULTRA-WIDEBAND STRIP-LINE POWER DIVIDER FOR 2-18 GHZ P.O. Afanasiev, V.A. Sledkov, M. B. Manuilov	323
2. PLANE CIRCULAR ARRAY WITH STEERING TIME DELAY OF PULSE EXCITATION N.N. Kolchigin, O.V. Kazansky, He Shi, Zheng Yu, D.D. Ivanchenko	326
3. DEVELOPMENT OF UWB PLANAR DIPOLE FOR NEAR SURFACE APPLICATIONS Ye.S. Maksimovitch, V.A. Badeev, K.P. Gaikovich, Yu.V. Petrukhin	329
4. THE FREQUENCY INDEPENDENCE OF FRACTAL ANTENNAS V.M. Onufrienko.....	332
5. FLAT RING FRACTAL ANTENNA K.V. Kutsuk.....	335
6. WIDE-BAND DIPOLE-SLOT ANTENNA T.A. Tsaliev.....	338
7. UWB ANTENNA WITH HIGH ISOLATION BETWEEN TRANSMITTING AND RECEIVING MODULES G.P. Pochanin, A.A. Olenko, P.V. Kholod, S.A. Masalov, I.Ye. Pochanina.....	341
8. FREQUENCY DEPENDENCES OF PEAK AMPLITUDE OF CURRENT PULSE IN LOOP COVERING A MAGNETO DIELECTRIC CYLINDER T.N. Ogurtsova, G.P. Pochanin, Yu.B. Sidorenko, P.V. Kholod.....	344

9. LOOP ANTENNA FOR RECEIVING PULSED ULTRA-WIDEBAND ELECTROMAGNETIC SIGNALS P.V. Kholod.....	347
10. THE EIGHT-ELEMENT VIVALDI ANTENNA ARRAY FOR X-BAND APPLICATIONS I.A. Fanyaev, V.P. Kudzin.....	350
11. CHOICE OF GEOMETRY OF DIRECTIONAL LOBES OF VIVALDI, DEPENDING ON THE BASE WIDTH OF THE RADIATION PATTERN AND A FREQUENCY BAND T.G. Aslanov, A.N. Zhukov.....	352

LOW-GAIN ANTENNAS

1. MATHEMATICAL MODEL OF SLOT RHOMBIC ANTENNA V.V. Hoblyk, O.M. Liske	355
2. ANTENNA SYSTEM FOR RADIOMONITORING L.Y. Ilnitskiy, O.A. Shcherbyna	358
3. FRAME LOOP WITH SWITCHABLE POLARIZATION O. Yurtsev, I. Sadovsky, G. Ptashinsky	361
4. THE SCATTERING CHARACTERISTICS OF UHF RFID-TAG ANTENNA T.N. Parfenovich, A.A. Popov	364
5. THE ELECTRODINAMICAL CHARACTERISTICS OF TWO-WAY SHORT-CIRCUIT SLOT IN MICROSTRIP DISK RESONATOR D.V. Mayboroda, S.A. Pogarsky, I.I. Saprykin, E.V. Seledkov	367
6. UPGRADES TO THE KHARKIV V. N. KARAZIN NATIONAL UNIVERSITY MF RADAR ANTENNA V.L. Dorohov, V.T. Rozumenko, V.G. Somov, O.F. Tyrnov	370
7. SMALL VHF BAND ANTENNA L. M. Lobkova, S. E. Marchenko	373
8. OPTIMIZATION OF GEOMETRIC PARAMETERS OF ANTENNA WITH A LOGARITHMIC FREQUENCY L.M. Lobkova, V.V. Golovin, L.A. Lashkova	375
9. PARAMETRIC EFFECTS IN NOT DIRECTED ANTENNAS, INSTALLED ON THE HELICOPTER FUSELAGE V.A. Ivanov, A.S. Zadorozhniy	378

MEASUREMENTS OF ANTENNA PARAMETERS

1. DOUBLE-FREQUENCY METHOD FOR THE INSTANTANEOUS FREQUENCY AND AMPLITUDE MEASUREMENT O.G. Morozov, M.R. Nurgazizov, A.A. Talipov.....	381
2. DOUBLE-FREQUENCY METHOD FOR THE DETERMINATION OF THE CENTRAL FREQUENCY, Q-FACTOR AND GAIN COEFFICIENT OF SMBS GAIN SPECTRUM O.G. Morozov, V. G. Kupriyanov, A. A. Talipov.....	384
3. MEASURING THE PERFORMANCE OF ACTIVE PHASED ARRAY ANTENNAS ON A COMPACT ANTENNA TEST RANGE OF COLLIMATOR TYPE “AKK1-12” S.V. Simovanian, I.E. Makushkin, A.E. Dorofeev	387
4. NEAR-FIELD MEASUREMENT OF LEVELS OF SPATIALLY UNCORRELATED SOUND SOURCES USING ANTENNA ARRAYS D.A. Orlov, V.I. Turchin, G.E. Fiks, I.Sh. Fiks	390
5. METHODS AND EQUIPMENT FOR ACCURATE MEASUREMENT OF REFLECTION COEFFICIENT IN KA-BAND A.G. Romanov.....	393
6. DEVICE FOR MEASURING COMPLEX IMPEDANCE OF ANTENNAS AND STANDING WAVE RATIO IN ANTENNA FEED LINE A.A. Smal.....	396
7. PROPERTIES OF E-CROSS FOR SIX-PORT MEASUREMENTS V.A. Karlov, V.F. Borulko, M.V. Andreev	399
8. THE ANTENNA FOR STANDARDS OF IEEE 802.11 A/B/G/N A.A. Savochkin, A.A. Nudga.....	402
9. PHASED ARRAY ANTENNA CALIBRATION PROBLEMS, INCLUDING IN-SERVICE AND MULTI-ELEMENT PAA CALIBRATION Y.V. Korotetskiy, A.M. Shitikov, V.V. Denisenko.....	405

ANALYTICAL AND NUMERICAL METHODS

1. WAVELET ANALYSIS OF SIGNALS IN PROBLEM OF SHORT RANGE RADIOLOCATION L.A. Varyanitza-Roshchupkina, G.P. Pochanin.....	408
2. NUMERICAL ANALYSES OF PLANAR WAVEGUIDE PAA WITH EXTERNAL DIELECTRICAL SHEETS BY PENETRATING AREA METHOD S.V. Marchenko, V.M. Morozov, A.M. Syanov.....	411

3. ANALYTICAL METHODS OF ELECTROMAGNETIC FIELD THEORY IN STUDENT STUDY	
I.Yu. Dmitrieva	414
4. HORIZONTAL ELECTRICAL DIPOLE RADIATION OUT OF A DIELECTRIC BALL SHIELDED BY A SPHERICAL SEGMENT	
V.A. Rezunenko, S.V. Roschupkin	417
5. METHOD OF HYPERSINGULAR INTEGRAL EQUATIONS IN DIFFRACTION PROBLEM BY STRIP GRATING OF RECTANGULAR SPLIT-RING RESONATORS	
M.E. Kaliberda, S.A. Pogarsky	420
6. THE APPROACHES FOR INCREASING ACCURACY OF N-FOLD DIFFERENTIATION OF SIGNALS PRESENTED AS KOTELNIKOV FINITE SERIES	
P.I. Nicholas	423
7. NUMERICAL METHODS OF STRUCTURE-STATISTICAL OBJECT CLASSIFICATION FOR REMOTE SENSING	
O.M. Dumin, V.A. Katrich, Y.A. Koltunov, I.V. Neroda	426

REFLECTOR ANTENNAS

1. COMPENSATION OF GRAVITATIONAL DEFORMATIONS OF LARGE REFLECTOR ANTENNAS USING RADIO HOLOGRAPHY	
A.V. Kalinin, S.S. Leschev	429
2. PHASE RETRIEVAL RADIO HOLOGRAPHY FOR LARGE REFLECTOR ANTENNAS	
A.V. Kalinin, S.P. Moiseev	431
3. DEPENDENCE OF THE LATERAL AND CROSS-POLARIZED RADIATION REFLECTOR ANTENNAS ON THEIR SIZE AND FOCAL LENGTH	
N.N. Gorobets, V.I. Kiyko, V.N. Gorobets	434
4. MULTIBEAM ANTENNA FOR THE MATRIX OF RADIOMETRIC IMAGING SYSTEM TO IMAGER OPERATING	
V.N. Bykov, D.D. Ivanchenko, N.N. Kolchigin, T.D. Berezhnaya	438
5. DESIGN AND OPTIMIZATION OF TRI-BAND COAXIAL FEED HORN FOR THE RADIO TELESCOPE ANTENNA	
A.O. Perov, V.V. Glamazdin, V.N. Skresanov.....	441
6. EXCITATION OF FAST PULSE GUIDED WAVE IN RECEIVING DIELECTRIC ROD ANTENNA	
M.N. Legenkiy, A.Yu. Butrym	444

7. PRECIPITATIONS INFLUENCE ON REFLECTOR ANTENNA RADIATION CHARACTERISTICS	
O.I. Sukharevsky, S.V. Nechitaylo, G.I. Khlopov, O.A. Voitovich.....	447
8. INITIAL GUESS SELECTION FOR OPTIMIZATION OF THE GIVEN FIELD DISTRIBUTION ON THE APERTURE OF A LEAKY WAVE ANTENNA	
S.O. Steshenko, Yu.B. Sidorenko, A.A. Kirilenko.....	450
9. MICROWAVE H-SECTORIAL HORN RADIATOR WITH THE RETURN RADIATION REDUCED LEVEL	
Ya.I. Lepikh, A.A. Karpenko, N.P. Zatovskaya.....	453
10. DUAL-BAND DUAL-POLARIZED LOG-PERIODIC FEED FOR REFLECTOR ANTENNA	
A.N. Plastikov, V.A. Vasiliev, S. E. Chadov.....	455
11. FEATURES OF A CHOICE OF A SPHERICAL REFLECTOR GEOMETRICAL PARAMETERS	
Yu.N. Tyschuk	458

COMPONENTS AND CIRCUITS OF MICROWAVE AND OPTOELECTRONIC COMMUNICATION SYSTEMS

1. ON FUNCTIONAL DIVERSITY OF LOCALISED INTERVALLEY CHARGE CARRIER TRANSFER	
S.A. Kostylev, S.A. Yatsunenko, Z.L. Vintman, A.G. Yatsunenko.....	461
2. NEW MANUFACTURING TECHNOLOGY OF MICROWAVE ELEMENTS AND UNITS FOR COMMUNICATION AND NAVIGATION SYSTEMS	
S.A. Kostylev, S.A. Yatsunenko, Z.L. Vintman, V.P. Djevinski, A.G. Yatsunenko.....	464
3. APERTURE OSCILLATIONS, ENHANCED TRANSMISSION AND POLARIZATION PLANE ROTATION IN THE LIGHT OF NATURAL OSCILLATIONS SPECTRUM (<i>invited paper</i>)	
A. Perov, A. Kirilenko, N. Kolmakova (Don), S. Prikolotin, S. Senkevich.....	467
4. STEPPED APPROXIMATION TECHNIQUE FOR DESIGNING COAXIAL WAVEGUIDE POLARIZERS	
A.A. Kirilenko, D.Yu. Kulik, S.A. Prikolotin, L.A. Rud, S.A. Steshenko.....	470
5. A NOVEL WIDEBAND COAXIAL POLARIZER	
F.F. Dubrovka, S.I. Piltyay.....	473
6. COMPACT WIDE-BAND COAXIAL-TO-WAVEGUIDE MICROWAVE TRANSITIONS FOR X AND KU BANDS	
V.A. Rudakov, V.A. Sledkov, A.P. Mayorov, M.B. Manuilov.....	475

7. COMPACT BANDPASS WAVEGUIDE FILTERS BASED ON MODIFIED SPLIT-RING RESONATORS	
D.Yu. Kulik, S.A. Prikolotin, L.P. Mospan, S.L. Senkevich.....	478
8. SPECTRAL PROPERTIES OF A BROKEN-SYMMETRY TWO-RIDGED RECTANGULAR WAVEGUIDE SECTION	
L.P. Mospan.....	481
9. REFLECTION, ABSORPTION AND DIELECTRIC PROPERTIES OF FOAM SPECIMENS IN RANG OF 2 – 4 GHZ	
L.A. Filins'kyy.....	484
10. ANALYSIS OF THE TECHNICAL STATE OF CABLE LINES OF LOCAL CONNECTION	
O.V. Bondarenko, A.I. Riabushei.....	487
11. PERFORMANCE INDICATORS OF WORK QUALITY OF TRANSPORT TELECOMMUNICATION PRIMARY NETWORK IN DONETSK, LVIV AND ODESSA REGIONS OF UKRAINE	
O.V. Bondarenko, B.Y. Kostik, D.M. Stepanov, E.V. Levenberg.....	489
12. POLARIZATION MODE DISPERSION COMPENSATOR BASED ON ANIZOTROPIC PROPERTIES OF SPIRAL-BENDED SINGLE-MODE FIBERS	
O.V. Bondarenko, D.G. Bagachuk.....	491
13. DIRECTIONAL OPTICAL COUPLER BASED ON ELECTROMAGNETIC CONNECTION BETWEEN ISOTROPIC AND ANISOTROPIC OPTICAL FIBERS	
O.M. Staschuk.....	494
14. L-BAND AIRBORNE LINEAR AESA DESIGN FEATURES	
P.A. Ageev, A.I. Sinani, G.F. Moseitchouk.....	497
15. NANOCOMPOSITES FOR ANTENNA-FEEDER SYSTEMS	
S.B. Bibikov, Ed.I. Kulikovskij, R.S. Sharafiev, A.V. Bychkova, A.A. Ol'khov.....	500
16. RESEARCH OF ELECTRO-OPTICAL MODULATORS USAGE FOR MICROWAVE PHOTONIC FILTERS	
O.G. Morozov, T.S. Sadeev, A.A. Talipov	503
17. MULTI-CHANNEL TRANSMIT/RECEIVE MODULES FOR X-BAND AESA	
N.V. Zhuchkova.....	506
18. CARBON NANOTUBES INTERFERENCE	
A.I. Luchaninov, E.A. Medvedev, S.R. Owaid.....	509
19. WAVEGUIDE AND STRIPLINE DEVICES FOR DIVIDING & SUMMING OF HIGH POWER. ADVANTAGES, DISADVANTAGES, DESIGN FEATURES, FIELD OF APPLICATION	
M.G. Vitkov, I.A. Yuskevich.....	512

20. MILLIMETER WAVE BWO-OSCILLATOR WITH MULTISTAGE GRATING
S.S. Ponomarenko, S.A. Kishko, E.M. Khutoryan, A.N. Kuleshov, B.P. Yefimov 515

INDUSTRIAL AND MEDICAL APPLICATIONS OF MICROWAVE TECHNOLOGY

1. USING OF QUANTUM INFORMATION THEORY IN REMOTE SENSING SYSTEMS
A.V. Kuznetsova 518
2. SOME SIMPLIFICATION OF THE ACOUSTIC ANTENNAS THEORY, CAUSED BY THE FEATURES OF ENVIRONMENT'S REACTION
N.N. Sulima 521
3. POLARIZATION SENSITIVE MULTIPATH PROPAGATION MODELING
M. B. Protsenko, S.V. Siden, A.V. Kuznetsova, A. Sokurashvili 523
4. MICROWAVE HEATING. THE DESIGN, MODELING AND MONITORING OF THERMAL PROCESSES AND COMPLEXES
G.A. Morozov, Ya.N. Shangaraeva 526
5. NONINVASIVE TECHNIQUE OF INVESTIGATING BIOLOGICAL TISSUES BASED ON A METHOD OF A RESONANT NEAR-FIELD MICROWAVE TOMOGRAPHY
A.I. Smirnov, D.V. Yanin, A.G. Galka, A.V. Kostrov, A.V. Strikovskiy 529
6. MOTION SENSORS BASED ON DUAL-FREQUENCY INTEGRATED ANTENNAS-OSCILLATORS
I.N. Prudyus, V.G. Storozh 532
7. MICROWAVES CAN REDUCE THE EFFECTS OF IONIZING RADIATION ON BIOLOGICAL OBJECTS
B.G. Yemets, E.B. Almazova, N.L. Yemets 535
8. ESTIMATION OF BROADBAND SIGNAL RADIATED BY A SINGLE SOURCE IN THE PRESENCE OF MULTIPLE ACOUSTIC INTERFERENCE SOURCES VIA MICROPHONE ARRAY
A.S. Ivanenkov, A.A. Rodionov 538
9. EXPERIENCE OF USING ANTENNA SYSTEMS IN EARTH-MOON-EARTH COMMUNICATIONS
V.A. Loshakov 541
10. MANAGING OF MICROWAVE ANTENNAS OF DIGITAL COMBINED RADIO RELAY-TROPOSCATTER STATION
V. Pochernyaev, V. Povhlib 544

11. RFID INDOOR POSITIONING SYSTEM BASED ON READ RATE MEASUREMENT INFORMATION	
Yu.B. Gimpilevich, D.A. Savochkin	546
12. FUSION OF SYNTHETIC APERTURE RADIOMETER AND NOISE WAVEFORM SAR IMAGES	
K.A. Lukin,V.V. Kudriashov	549
13. RESEARCHES OF RECEIVING-RECTIFYING ELEMENT OF THE RECTENNAS FOR WIRELESS POWER TRANSMISSION SYSTEMS TO REMOTE OBJECTS	
D.V.Gretskih, A.V.Gomozov, Sh.F.A.Al-Sammarraie, A.A. Storogev.....	552
14. EFFICIENCY ENHANCEMENT OF UPLINK CHANNEL BY MEANS OF OPTIMIZING THE ORIENTATION OF THE BASE STATION ANTENNA	
E.A. Sukachev, A.A. Pospelova	555
15. INFLUENCE OF ANTENNA ELECTROMAGNETIC PARAMETERS ON RADIO LINK TRANSMISSION COEFFICIENT	
I.Yu. Rozhnovskaya, D.Yu. Bukhan, M. Kopach,V. Pylypenko	557

ROUND TABLE

1. ANTENNAS, FOCUSED IN THE NEAR RADIATED FIELD ZONE. FEATURES AND TECHNICAL APPLICATION	
D.A. Vedenkin, O.V. Potapova, Yu.E. Sedelnikov	560
2. FIELD RESEARCH IN NEAR ZONE OF ANTENNAS, CARRIED OUT AT BELARUSIAN STATE UNIVERSITY OF INFORMATICS AND RADIOELECTRONICS	
O.A. Yurtsev, N.M. Naumovich	566
3. WORKS DEPARTMENT OF APPLIED ELECTRODYNAMICS V.N. KARAZIN KHARKOV NATIONAL UNIVERSITY IN THE FIELDTHEORY OF NEAR AREA ANTENNAS	
N.N. Gorobets	572
4. WAVE PROCESSES IN NEAR ZONE OF HERTZ DIPOLE WITH PLANE SCREEN	
N.N. Gorobets, N.P. Yeliseyeva	580
5. CALCULATION AND ANALYSIS OF NEAR FIELD OF DIPOLE WITH CORNER REFLECTOR	
N.P. Yeliseyeva	583
6. FRESNEL REGION ASYMPTOTICS OF NEAR-FIELD TO FAR-FIELD TRANSFORMATION: THE CYLINDRICAL CASE	
Yu.V. Krivosheev, A.V. Shishlov	586