

VI. VORTICES AND SOLITONS IN PLASMAS

1. EVOLUTION OF INTEGRAL CHARACTERISTICS OF DRIFT VORTICES IN COLLISION PLASMAS G.D.Aburdzhaniya, V.N.Ivanov, F.N.Kamenetz, A.V.Pukhov	12
2. REFLECTION OF ELECTROMAGNETIC WAVES FROM DRIFT SOLITON G.D.Aburdzhaniya	16
3. THE STRUCTURE OF NON-LINEAR WAVES IN A MOVING PLASMA V.V.Amelin, N.S.Stepanov	20
4. CAVITON FORMATION BY A VHF ELECTRIC FIELD P.J.Barrett, T.Tanikawa, A.Y.Wong	23
5. LINEAR AND NONLINEAR SHORT WAVELENGTH DRIFT WAVE FLUCTUATIONS R.Bharuthram, P.K.Shukla	27
6. DYNAMICS OF SOLITON FORMATION FROM RANDOM LANGMUIR WAVES B.N.Breizman, K.Jungwirth	31
7. ENVELOPE SOLITONS IN PARAMETRIC WAVE INTERACTIONS G.N.Burlak, N.Ya.Kotsarenko, N.Yu.Taranenko	35
8. THE COHERENT STRUCTURES IN THE NON-EQUILIBRIUM PLASMA T.I.Demidova, I.P.Zavershinsky, E.Ya.Kogan, B.Yu.Kusin, N.E.Molevich	39
9. SOLITARY LANGMUIR WAVE IN PLASMA WITH AN ELECTRON BEAM V.G.Dorofeenko, V.B.Krasovitskii	43
10. TWO-DIMENSIONAL LANGMUIR COLLAPSE AND TWO-DIMENSIONAL LANGMUIR CAVITONS A.I.Dyachenko, A.M.Rubenchik, V.F.Shvets, V.E.Zakharov	46
11. GENERALIZED TWO-DIMENSIONAL ELECTRON VORTICES AND TWO-DIMENSIONAL STABILITY OF ELECTRON FLOWS M.B.Isichenko, A.M.Marnachev	48
12. LOW FREQUENCY RADIATION AND DYNAMICS OF MAGNETOACOUSTIC SOLITONS IN INHOMOGENEOUS MAGNETIC FIELD R.G.Jangirian, F.A.Kostanyan	51

13. SOLITON IN RANDOM PLASMA	
F.V.Kusmartsev	55
14. CATASTROPHE OF THE LANGMUIR SOLITON	
F.V.Kusmartsev	59
15. ON THE DECAY INSTABILITY OF THE LANGMUIR SOLITONS IN MAGNETIZED PLASMA	
E.A.Kuznetsov	63
16. DRIFT SOLITONS	
V.P.Lakhin, A.B.Mikhailovskii, O.G.Onishchenko	65
17. ON STABILITY OF LARGE GRADIENT VORTICES IN PLASMA	
L.A.Mikhailovskaya, N.S.Erokhin	69
18. PROBLEMS OF LOCALIZATION AND GROWTH OF DRIFT PERTURBATIONS IN PLASMA	
S.S.Moiseev, V.I.Petviashvili	73
19. LARGE-SCALE VORTICES OF NONTRIVIAL TOPOLOGY IN A TURBULENT CONVECTION	
S.S.Moiseev, P.B.Rutkevitch, A.V.Tur, V.V.Yanovskii	75
20. COMMON MECHANISM OF VORTEX STRUCTURE DRIVE IN PLASMA, PLANETARY ATMOSPHERES AND IN GALAXIES	
M.V.Nezlin, E.N.Snezhkin, A.S.Trubnikov, A.M.Fridman	80
21. PROPAGATION OF DISCONTINUITIES IN THE HASEGAWA-MIMA EQUATION	
J.Nycander	84
22. MAGNETIC VORTICES IN NONUNIFORM PLASMAS	
J.Nycander, V.P.Pavlenko, L.Stenflo	88
23. GLOBAL VORTEX PATTERN IN A ROTATING PLASMA	
J.Nycander, V.P.Pavlenko	92
24. FLUTE VORTEX AS INVARIANT SOLUTION	
V.P.Pavlenko, V.B.Taranov	96
25. NEGATIVE ENERGY VORTICES IN INHOMOGENEOUS PLASMA	
O.A.Pokhotelov	99
26. BLOW-UP IN NONLINEAR SCHRÖDINGER EQUATIONS	
K.Rypdal, J.J.Rasmussen	103

27. STABILITY OF NONLINEAR PERIODIC WAVES AND MEDIUM DISPERSION SIGN	
M.D.Spector	107
28. DYNAMICS OF A SOLITARY VORTEX IN A ROTATING LAYER	
G.G.Sutyurin	111
29. ION-ACOUSTIC SOLITONS AT CRITICAL DENSITIES IN MULTICOMPONENT PLASMAS WITH DIFFERENT IONIC CHARGES AND TEMPERATURES	
F.Verheest	115
30. COHERENT STRUCTURES OF THE KINETIC WAVE PROPAGATION IN A PLASMA	
A.A.Vodyanitskij, N.S.Erokhin, S.S.Moiseev	119
31. NONLINEAR GENERATION OF MAGNETIC VORTICES IN A PLASMA	
M.Y.Yu, P.K.Shukla, L.Stenflo	123

VII. TURBULENCE AND CHAOS

1. LARGE AMPLITUDE LANGMUIR WAVES. ELECTRON NONLINEARITY AND STOCHASTICITY	
N.S.Buchelnikova, E.P.Matochkin	128
2. LANGMUIR WAVES IN THE INHOMOGENEOUS PLASMA. STOCHASTIC INSTABILITY	
N.S.Buchelnikova, E.P.Matochkin	132
3. KINEMATIC WAVES; MULTIFLOWS; DIFFUSION APPROXIMATION	
G.M.Fraiman	136
4. THERMODYNAMICS OF STRONG PLASMA TURBULENCE	
G.M.Fraiman, A.P.Protogenov	139
5. LARGE SCALE STOCHASTICITY IN WAVE-PARTICLE INTERACTION	
F.M.Freire, J.T.Mendonça	142
6. SLOW HAMILTONIAN CHAOS	
D.F.Escande	146
7. CONDITIONAL SAMPLING IN PLASMA TURBULENCE	
H.Johnsen, H.L.Pécseli, J.Trulsen	150

8. THE EXACT NONSTATIONARY SOLUTIONS OF A KINETIC EQUATION WITH THE SOURCE AND THEIR SELF-SIMILAR ASYMPTOTICS	
A.V.Kats	154
9. SCALING AND WAVE SPECTRA	
A.V.Kats, V.M.Kontorovich	157
10. ON THE PREDICTABILITY OF TURBULENCE AND DYNAMIC CHAOS	
Yu.A.Kravtsov	161
11. DYNAMICS OF DEVELOPMENT OF CHAOS IN THE DISTRIBUTED SYSTEMS WITH THE DIFFUSION	
Yu.P.Machekin, A.V.Nikolaev	165
12. MODELS OF STRONG LANGMUIR TURBULENCE	
V.M.Malkin	169
13. ON A SPECTRUM OF WEAK SOUND TURBULENCE	
S.L.Musher, P.Yu.Sokolovskiy	173
14. NUMERICAL INVESTIGATION OF CONDITIONAL EDDIES IN ION-ACOUSTIC TURBULENCE	
H.L.Pécseli, J.Trulsen	176
15. CHAOTIC BEHAVIOR OF MHD FLOW IN A SHEARED MAGNETIC FIELD	
Qiu Xiaoming, Wang Xiaogang	180
16. STOCHASTIC BEHAVIOR IN PRESENCE OF MONOCHROMATIC WAVE IN AN INHOMOGENEOUS PLASMA	
D.R.Shklyar, V.V.Solov'ev	184
17. PLASMA STATISTICS IN CLOSED MAGNETIC FIELDS	
G.V.Skorniyakov	188
18. SPECTRAL PROPERTIES AND STRUCTURES IN STRONG TURBULENCE	
A.V.Tur, V.V.Yanovsky	192
19. CLOSED EQUATIONS FOR CORRELATION MOMENTS IN STRONG TURBULENCE	
A.V.Tur, V.V.Yanovsky	198
20. HELICAL STRUCTURES IN TURBULENT FLOWS	
A.V.Tur, G.A.Khomenko, V.V.Gvaramadze, O.G.Chkhetiani	203
21. THE TRANSITION TO TURBULENCE OF A BEAM-PLASMA SYSTEM	
C.A.F.Varandas, J.T.Mendonça	207

22. GLOBAL ANALYSIS OF RELATIVE SPATIAL DIFFUSION OF CHARGED PARTICLES IN A MAGNETO-TURBULENT PLASMA	
Wang Haida, Qiu Xiaoming	211
23. THEORY OF PHASE SPACE CLUMPS IN MAGNETO-TURBULENT PLASMA	
Wang Xiaogang, Wang Haida, Qiu Xiaoming	215
24. CHAOTIC DYNAMICS OF CHARGED PARTICLES IN ELECTROMAGNETIC FIELDS	
G.M.Zaslavskii, M.Ya.Natanzon, B.A.Petrovichev, R.Z.Sagdeev, A.A.Chernikov	219

VIII. DISCHARGES

1. SELF-ACTION EFFECTS OF A STATIONARY HIGH-CURRENT DISCHARGE PLASMA	
G.N.Alferov, V.P.Drachev, E.A.Kuznetsov, V.K.Mezentsev, Yu.E.Nesterikhin, G.I.Smironov	224
2. PARAMETERS OF A PLASMA PRODUCED AT GYROMAGNETIC AUTORESONANCE IN THE PLASMA SYNCHROTRON GYRAC-0	
V.V.Ahndreev, K.S.Golovanivsky, S.Colunga, A.M.Umnov	228
3. INVESTIGATION OF PLASMA PARAMETERS IN THE LOWEST PRESSURE DISCHARGE WITH A HOLLOW CATHODE	
A.P.Avtjushkov, A.F.Stekolnikov	231
4. COMPUTER SIMULATION OF EQUILIBRIUM AND TRANSPORT PROPERTIES OF A DENSE HYDROGEN PLASMA	
F.B.Baimbetov, T.S.Ramazanov, N.B.Shaltykov	235
5. GENERATION OF OVERDENSE MICROWAVE PLASMA DUE TO NON-LINEAR WAVE CONVERSION	
A.A.Balmashnov, K.S.Golovanivsky, E.Camps	239
6. ON THE CURRENT DEPENDENCE OF THE ANODE PLASMA OSCILLATIONS IN A HELIUM DC-DISCHARGE	
L.Biborosch, G.Popa, M.Sanduloviciu	243
7. THE PLASMA EROSION SWITCH MODE OF THE REFLEX TRIODE OPERATION	
V.M.Bistritsky, A.I.Arbusov, I.B.Ivanov, A.V.Petrov	247

8. SPECIFIC FEATURES OF ION CYCLOTRON INSTABILITY EXCITATION IN THE PENNING DISCHARGE WITH THE DISSECTED ANODE V.N.Borisko, A.A.Luchaninov, G.A.Lysikov	251
9. ION-ACOUSTIC WAVES IN HIGH-CURRENT GAS DISCHARGE V.I.Donin, D.A.Shapiro, D.V.Yakovin, A.S.Yatsenko	254
10. FORMING OF AN AMBIPOLAR POTENTIAL BARRIER IN A LOW PRESSURE ECR-DISCHARGE PLASMA IN A NON-UNIFORM MAGNETIC FIELD V.D.Dougar-Zhabon, B.A.Kondratov	258
11. ION ACOUSTIC WAVE EXCITATION BY PONDEROMOTIVE EFFECTS P.Fischer, C.Gauthereau, J.Godiot, G.Matthieussent	261
12. NON-DIFFUSIVE ION BEAM VELOCITY SPREAD MEASURED BY A DIRECTIONAL ENERGY ANALYZER H.Fujita, S.Yagura, K.Rypdal	264
13. THE EFFECT OF FOREIGN GASES ON THE RADIATIVE PROPERTIES OF COMPLEX ORGANIC MOLECULES EXCITED BY AN ELECTRON BEAM V.V.Gruzinskii, A.V.Kukhto	268
14. RADIATIVE LOSS OF THE DENSE HIGH-TEMPERATURE HIGH-Z PLASMA COLUMN V.V.Loskutov, A.V.Luchinsky	272
15. ABSORPTION MEASUREMENTS IN PLASMAS CREATED BY PICOSECOND DURATION Nd LASER RADIATION A.Perry, B.Luther-Davies, R.Dragila	276
16. EQUIVALENT CIRCUIT OF DC DISCHARGE FOR ANODE RELAXATION OSCILLATIONS G.Popa, V.Sahleanu, M.Sanduloviciu	280
17. EFFECT OF HIGH-FREQUENCY SURFACE WAVE FIELD ON SELF- EXCITED IONIZATION WAVES IN GAS DISCHARGE PLASMA A.Shivarova, E.Tatarova, T.Stoychev, V.Angelova	284

18. ABSOLUTE AND DYNAMICAL NEGATIVE CONDUCTIVITIES IN NON-SELF-MAINTAINED DISCHARGES IN PURE RARE GASES AND RARE-MOLECULAR GAS MIXTURES V.V.Vladimirov, P.M.Golovinsky, A.I.Shchedrin	288
--	-----

IX. PARTICLE ACCELERATION. DOUBLE LAYERS IN PLASMAS

1. ALTERNATING CURRENT DRIVEN PLASMA DOUBLE LAYER D.Alexandroaei, M.Sanduloviciu	294
2. DOUBLE LAYER FORMATION IN A ONE-DIMENSIONAL CURRENT- CARRYING PLASMA WITH THE DEVELOPMENT OF ION-ACOUSTIC INSTABILITY A.S.Bakai, V.I.Maslov	298
3. CHARGED PARTICLE ACCELERATION BY SPACE CHARGE WAVES EXCITED BY MODULATED BEAMS IN AN INHOMOGENEOUS PLASMA IN A MAGNETIC FIELD V.A.Balakirev, V.V.Mukhin, V.E.Novikov	302
4. ELECTRIC FIELDS ALONG THE MAGNETIC FIELD IN A COLLISION- FREE LABORATORY PLASMA M.Bohm, S.Torvén	306
5. CHARGED PARTICLE ACCELERATION IN THE INTERACTION OF A STRONG ELECTROMAGNETIC WAVE WITH AN INHOMOGENEOUS NONMAGNETIZED PLASMA S.V.Bulanov, I.M.Kovrizhnykh, A.S.Sakharov	310
6. FAST ELECTRON GENERATION UNDER ANOMALOUS ABSORPTION OF MICROWAVE RADIATION BY ION-SOUND TURBULENCE V.Yu.Bychenkov, D.M.Karfidov, E.B.Kupriyanova, K.F.Sergeichev, I.A.Sychov	314
7. ELECTRONS ACCELERATION IN MAGNETOACTIVE PLASMAS BY ELECTROMAGNETIC WAVE WITH SPATIALLY GROWING PHASE VELOCITY N.S.Erokhin, A.A.Lazarev, S.S.Moiseev	318
8. ELECTRON ACCELERATION BY PARAMETRICALLY EXCITED WAVES IN A CURRENT-CARRYING PLASMA V.D.Fedorchenko, A.B.Kitsenko, Yu.V.Seromolot	322

9. NUMERICAL SIMULATION OF THE ELECTRON ACCELERATION IN PLASMA UNDER THE EFFECT OF POWERFUL ELECTROMAGNETIC RADIATION	
E.M.Gavrilov, A.M.Rubenchik, V.F.Shvets	326
10. ACCELERATION OF ELECTRONS OF COLLISIONLESS PLASMA IN STRONG ELECTROMAGNETIC FIELDS	
I.R.Gekker	328
11. PLASMA WAVES EXCITATION BY THE SHORT ELECTROMAGNETIC WAVE-PACKET	
L.M.Gorbunov, V.I.Kirsanov	332
12. WEAK COMPRESSIVE ION ACOUSTIC DOUBLE LAYERS IN PRESENCE OF NEGATIVE IONS ON THE AURORAL FIELD LINES	
K.S.Goswami, S.Bujarbarua	335
13. CHARGE COMPENSATION AND ACCELERATION OF HIGH CURRENT ION BEAMS IN MAGNETICALLY INSULATED SYSTEMS	
V.I.Karas', V.V.Mukhin, V.E.Novikov, A.M.Naboka	339
14. SOME MODERN PROBLEMS OF NON-STATIONARY AND NON-LOCAL PROCESSES IN INHOMOGENEOUS PLASMA	
S.S.Moiseev	343
15. ELECTRON ACCELERATION IN PLASMA WAVE PROPAGATING IN SMALL GRADIENT PLASMA	
V.B.Rozanov, S.A.Shumsky	346
16. DOUBLE LAYER AS A MECHANISM FOR ENERGY RELEASE	
M.Sanduloviciu, D.Alexandroaei, R.Schrittwieser	348
17. OPTOGALVANIC EFFECTS IN A ANODE DOUBLE LAYER	
M.Strat, M.Sanduloviciu	352
18. ON THE FORMATION OF ION ACOUSTIC DOUBLE LAYERS	
S.Sutradhar Das, S.Bujarbarua	356