

Irina V Zotova

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128
papers

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h-index

28
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163
ext. papers

1,397
ext. citations

1.7
avg, IF

4.05
L-index

#	Paper	IF	Citations
128	Experimental Observation of Cyclotron Superradiance under Group Synchronism Conditions. <i>Physical Review Letters</i> , 1997 , 78, 2365-2368	7.4	79
127	Generation of powerful subnanosecond microwave pulses by intense electron bunches moving in a periodic backward wave structure in the superradiative regime. <i>Physical Review E</i> , 1999 , 60, 3297-304	2.4	79
126	Generation of Cherenkov superradiance pulses with a peak power exceeding the power of the driving short electron beam. <i>Physical Review E</i> , 2006 , 74, 016501	2.4	74
125	Generation of electromagnetic fields of extremely high intensity by coherent summation of Cherenkov superradiance pulses. <i>Physical Review Letters</i> , 2015 , 115, 114802	7.4	62
124	A novel THz-band double-beam gyrotron for high-field DNP-NMR spectroscopy. <i>Review of Scientific Instruments</i> , 2017 , 88, 094708	1.7	41
123	Time-domain self-consistent theory of frequency-locking regimes in gyrotrons with low-Q resonators. <i>Physics of Plasmas</i> , 2015 , 22, 033101	2.1	36
122	Generation of powerful subnanosecond microwave pulses in the range of 38-150 GHz. <i>IEEE Transactions on Plasma Science</i> , 2000 , 28, 1615-1619	1.3	36
121	High-power terahertz-range planar gyrotrons with transverse energy extraction. <i>Physical Review Letters</i> , 2012 , 108, 105101	7.4	32
120	Experimental observation of superradiance in millimeter-wave band. <i>Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment</i> , 1997 , 393, 352-355	1.2	31
119	Generation of Rogue Waves in Gyrotrons Operating in the Regime of Developed Turbulence. <i>Physical Review Letters</i> , 2017 , 119, 034801	7.4	30
118	Generation of Subterahertz Superradiance Pulses Based on Excitation of a Surface Wave by Relativistic Electron Bunches Moving in Oversized Corrugated Waveguides. <i>Physical Review Letters</i> , 2016 , 117, 204801	7.4	26
117	Frequency Tunable sub-THz Gyrotron for Direct Measurements of Positronium Hyperfine Structure. <i>Journal of Infrared, Millimeter, and Terahertz Waves</i> , 2018 , 39, 975-983	2.2	21
116	Electron-optical systems for planar gyrotrons. <i>Physics of Plasmas</i> , 2014 , 21, 023106	2.1	18
115	Phase-Imposing Initiation of Cherenkov Superradiance Emission by an Ultrashort-Seed Microwave Pulse. <i>Physical Review Letters</i> , 2017 , 118, 264801	7.4	18
114	Effect of the nonlinear compression of ultrashort microwave pulses in the process of the amplification by quasistationary electron beams. <i>JETP Letters</i> , 2010 , 91, 553-557	1.2	17
113	Generation of gigantic ultra-short microwave pulses based on passive mode-locking effect in electron oscillators with saturable absorber in the feedback loop. <i>Physics of Plasmas</i> , 2016 , 23, 050702	2.1	17
112	Frequency Locking and Stabilization Regimes in High-Power Gyrotrons with Low-Q Resonators. <i>Radiophysics and Quantum Electronics</i> , 2016 , 58, 684-693	0.7	17

111	Generation of trains of ultrashort microwave pulses by two coupled helical gyro-TWTs operating in regimes of amplification and nonlinear absorption. <i>Physics of Plasmas</i> , 2017 , 24, 023103	2.1	16
110	Coherent Summation of Emission From Relativistic Cherenkov Sources as a Way of Production of Extremely High-Intensity Microwave Pulses. <i>IEEE Transactions on Plasma Science</i> , 2016 , 44, 377-385	1.3	16
109	Generation of a periodic sequence of powerful ultrashort pulses in a traveling wave tube with bleachable absorber in the feedback loop. <i>Technical Physics Letters</i> , 2015 , 41, 836-839	0.7	16
108	Generation, Amplification, and Nonlinear Self-Compression of Powerful Superradiance Pulses. <i>IEEE Transactions on Plasma Science</i> , 2013 , 41, 646-660	1.3	16
107	Improvement of Stability of High Cyclotron Harmonic Operation in the Double-Beam THz Gyrotrons. <i>IEEE Transactions on Plasma Science</i> , 2016 , 1-7	1.3	14
106	Mechanisms of amplification of ultrashort electromagnetic pulses in gyrotron traveling wave tube with helically corrugated waveguide. <i>Physics of Plasmas</i> , 2015 , 22, 113111	2.1	14
105	Terahertz free-electron lasers with bragg structures based on the coupling between traveling and quasicritical waves. <i>JETP Letters</i> , 2010 , 91, 266-270	1.2	14
104	Self-induced transparency and electromagnetic pulse compression in a plasma or an electron beam under cyclotron resonance conditions. <i>Physical Review Letters</i> , 2010 , 105, 265001	7.4	14
103	Frequency Stabilization in a Sub-Terahertz Gyrotron With Delayed Reflections of Output Radiation. <i>IEEE Transactions on Plasma Science</i> , 2018 , 46, 2465-2469	1.3	13
102	Three-dimensional particle-in-cell modeling of terahertz gyrotrons with cylindrical and planar configurations of the interaction space. <i>Physics of Plasmas</i> , 2013 , 20, 043103	2.1	12
101	Self-induced transparency, compression, and stopping of electromagnetic pulses interacting with beams of unexcited classical oscillators. <i>Journal of Experimental and Theoretical Physics</i> , 2011 , 113, 772-780	7.80	12
100	3D quasioptical theory of terahertz superradiance of an extended electron bunch moving over a corrugated surface. <i>Physical Review Letters</i> , 2013 , 110, 184801	7.4	11
99	Experimental observation of Cherenkov superradiance from an intense electron bunch. <i>Optics Communications</i> , 2000 , 175, 139-146	2	11
98	Experimental observation of cyclotron superradiance. <i>JETP Letters</i> , 1996 , 63, 331-335	1.2	11
97	Chaotic millimeter wave generation in a helical-waveguide gyro-TWT with delayed feedback. <i>Physics of Plasmas</i> , 2016 , 23, 103106	2.1	10
96	Generation of intense spatially coherent superradiant pulses in strongly oversized 2D periodical surface-wave structure. <i>Applied Physics Letters</i> , 2020 , 117, 183505	3.4	9
95	Time-domain theory of gyrotron traveling wave amplifiers operating at grazing incidence. <i>Physics of Plasmas</i> , 2015 , 22, 013112	2.1	9
94	Powerful terahertz free electron lasers with hybrid Bragg reflectors. <i>Physical Review Special Topics: Accelerators and Beams</i> , 2011 , 14,		9

93	Experimental observation of superradiance in the stimulated scattering of an intense microwave pump wave by a counterpropagating subnanosecond high-current relativistic electron bunch. <i>JETP Letters</i> , 2005 , 82, 263-266	1.2	9
92	Undulator superradiance effect and its applicability for the generation of multimewatt terahertz pulses. <i>Journal of Experimental and Theoretical Physics</i> , 2014 , 119, 632-640	1	8
91	Development of Third-Harmonic 1.2-THz Gyrotron With Intentionally Increased Velocity Spread of Electrons. <i>IEEE Transactions on Electron Devices</i> , 2020 , 67, 4432-4436	2.9	8
90	An Experimental Investigation of a 0.8 THz Double-Beam Gyrotron. <i>Journal of Infrared, Millimeter, and Terahertz Waves</i> , 2019 , 40, 1114-1128	2.2	7
89	Conversion of an electromagnetic wave into a periodic train of solitons under cyclotron resonance interaction with a backward beam of unexcited electron-oscillators. <i>Physical Review Letters</i> , 2014 , 113, 143901	7.4	7
88	Generation of ultrashort microwave pulses in the sub-THz and THz range based on the cyclotron superradiance effect. <i>Technical Physics Letters</i> , 2017 , 43, 831-834	0.7	7
87	Amplification of ultrashort electromagnetic pulses propagating along quasi-continuous electron beams. <i>Technical Physics</i> , 2009 , 54, 103-109	0.5	7
86	Free-electron maser with high-selectivity Bragg resonator using coupled propagating and trapped modes. <i>Technical Physics Letters</i> , 2010 , 36, 952-956	0.7	7
85	. <i>IEEE Transactions on Electron Devices</i> , 2018 , 65, 2334-2339	2.9	6
84	Gyrotron generation of broadband chaotic radiation under overlapping of high- and low-frequency resonances. <i>Technical Physics</i> , 2017 , 62, 1562-1568	0.5	6
83	Mutual synchronization of weakly coupled gyrotrons. <i>Physics of Plasmas</i> , 2015 , 22, 093118	2.1	6
82	Generation of high-power ultrashort electromagnetic pulses on the basis of effects of superradiance of electron bunches. <i>Radiophysics and Quantum Electronics</i> , 2007 , 50, 762-779	0.7	6
81	The generation of superradiance pulses by high-current subnanosecond electron bunches moving in a periodic slow-wave system: Theory and experiment. <i>Technical Physics</i> , 2002 , 47, 80-87	0.5	6
80	Characteristic features of the amplification of short electromagnetic pulses during propagation along steady-state electron beams. <i>Technical Physics Letters</i> , 1999 , 25, 930-932	0.7	6
79	Phase-imposed regime of relativistic backward-wave oscillators. <i>Journal of Applied Physics</i> , 2018 , 124, 123303	2.5	6
78	Nonlinear excitation of parasitic modes in harmonic gyrotrons. <i>Physics of Plasmas</i> , 2020 , 27, 063304	2.1	5
77	Investigation of the Frequency Double-Multiplication Effect in a Sub-THz Gyrotron. <i>Journal of Infrared, Millimeter, and Terahertz Waves</i> , 2020 , 41, 1245-1251	2.2	5
76	Time-domain theory of low-Q gyrotrons with frequency-dependent reflections of output radiation. <i>Physics of Plasmas</i> , 2018 , 25, 013104	2.1	5

75	Generation of a Periodic Series of High-Power Ultra-Short Pulses in a Gyro-TWT with a Bleachable Cyclotron Absorber in the Feedback Circuit. <i>Radiophysics and Quantum Electronics</i> , 2016 , 58, 598-606	0.7	5
74	Quasi-optical theory of radiation amplification by electron flow above resistive metal surface. <i>Technical Physics Letters</i> , 2013 , 39, 123-126	0.7	5
73	Generation of periodic high-power ultrashort pulse sequences in a chain of coupled traveling-wave tubes operating in the regimes of amplification and nonlinear Kompfner suppression. <i>Technical Physics Letters</i> , 2017 , 43, 842-845	0.7	5
72	Optimization of terahertz range gyrotron self-excitation conditions by increasing the lifetime of cyclotron oscillators in low-voltage interaction space. <i>Technical Physics Letters</i> , 2017 , 43, 110-113	0.7	4
71	Experimental Observation of Chaotic Generation at 1.5% Spectral Width in a Gyrotron under Large Supercriticality Conditions. <i>Technical Physics Letters</i> , 2019 , 45, 511-514	0.7	4
70	Experimental Demonstration of the Possibility to Expand the Band of Smooth Tuning of Frequency Generation in Short-Cavity Gyrotrons. <i>Radiophysics and Quantum Electronics</i> , 2019 , 61, 797-800	0.7	4
69	Theoretical and Experimental Investigations of Terahertz-Range Gyrotrons with Frequency and Spectrum Control. <i>Journal of Infrared, Millimeter, and Terahertz Waves</i> , 2020 , 41, 1131-1143	2.2	4
68	Development of the 75-GHz planar gyrotron with transverse energy extraction. <i>Journal of Communications Technology and Electronics</i> , 2014 , 59, 777-781	0.5	4
67	Experimental study of a THz band double-beam gyrotron 2017 ,		4
66	Submillimeter planar gyrotrons with transverse diffraction output of radiation. <i>Technical Physics Letters</i> , 2011 , 37, 79-82	0.7	4
65	Theory of cyclotron super-radiance from a moving electron bunch under group synchronism condition. <i>Physics of Plasmas</i> , 2003 , 10, 4494-4503	2.1	4
64	Development of the Concept of High-Power Microwave Oscillators with Phase Locking by an External Signal. <i>Radiophysics and Quantum Electronics</i> , 2019 , 62, 447-454	0.7	4
63	Nonlinear Cyclotron Resonance Absorber for a Microwave Subnanosecond Pulse Generator Powered by a Helical-Waveguide Gyrotron Traveling-Wave Tube. <i>Physical Review Applied</i> , 2020 , 13,	4.3	4
62	Chaotic Generation in a W-Band Gyroklystron With Delayed Feedback. <i>IEEE Transactions on Plasma Science</i> , 2018 , 46, 2470-2474	1.3	3
61	Self-similar modes of amplification and compression of electromagnetic pulses in their interaction with electron flows. <i>Technical Physics Letters</i> , 2013 , 39, 446-449	0.7	3
60	Terahertz superradiance of an extended electron bunch propagating over a corrugated surface. <i>Technical Physics Letters</i> , 2012 , 38, 951-954	0.7	3
59	Diffraction selection of modes in planar backward-wave oscillators. <i>Radiophysics and Quantum Electronics</i> , 2009 , 52, 568-575	0.7	3
58	Brenkov superradiance from a subnanosecond electron bunch in a sectional decelerating system. <i>Technical Physics Letters</i> , 1997 , 23, 948-950	0.7	3

57	Generation of subnanosecond superradiance pulses in the short-wavelength part of the millimeter range. <i>Technical Physics Letters</i> , 1999 , 25, 927-929	0.7	3
56	Generation of ultrashort microwave pulses based on cyclotron superradiance. <i>IEEE Transactions on Plasma Science</i> , 1999 , 27, 462-469	1.3	3
55	Universal Electron Gun Design for a CW Third Harmonic Gyrotron with an Operating Frequency over 1 THz. <i>Journal of Infrared, Millimeter, and Terahertz Waves</i> , 2020 , 41, 1121-1130	2.2	3
54	Development and preliminary tests of a second harmonic double-beam continuous wave gyrotron with operating frequency of 0.79 THz 2016 ,		3
53	Generation of Electromagnetic Rogue-Waves in Submillimeter-Band Gyrotrons. <i>Journal of Infrared, Millimeter, and Terahertz Waves</i> , 2019 , 40, 150-157	2.2	3
52	Generation of a Periodic Sequence of High-Power Ultrashort Pulses in a Chain of Coupled Backward-Wave and Traveling-Wave Tubes Operating in the Regimes of Amplification and Nonlinear Kompfner Suppression. <i>Technical Physics</i> , 2018 , 63, 1205-1211	0.5	2
51	Quasioptical Theory of Relativistic Brekrov Generators and Amplifiers. <i>Radiophysics and Quantum Electronics</i> , 2014 , 56, 508-531	0.7	2
50	Using the lorentz transformation to simulate terahertz-range superradiance of picosecond electron bunches moving in an undulator field. <i>Technical Physics Letters</i> , 2012 , 38, 531-534	0.7	2
49	The amplification, compression, and self-induced transparency effects for the ultrashort electromagnetic pulses propagating along quasi-stationary electron beams. <i>Radiophysics and Quantum Electronics</i> , 2012 , 54, 532-547	0.7	2
48	Short-wave sectioned free-electron masers with Bragg resonators based on the traveling and quasi-critical wave coupling. <i>Radiophysics and Quantum Electronics</i> , 2009 , 52, 557-563	0.7	2
47	Generation of giant pulses of scattered radiation on the moving front of a pump wave. <i>JETP Letters</i> , 2008 , 87, 124-127	1.2	2
46	Theory of cyclotron superradiance from a moving electron bunch under group synchronism conditions. <i>Technical Physics</i> , 2000 , 45, 813-820	0.5	2
45	Pulsed EHF superradiance due to the stimulated scattering of a high-power pump wave by a counterpropagating electron bunch. <i>Technical Physics Letters</i> , 2000 , 26, 694-697	0.7	2
44	Terahertz-Range High-Order Cyclotron Harmonic Planar Gyrotrons with Transverse Energy Extraction. <i>Journal of Infrared, Millimeter, and Terahertz Waves</i> , 2020 , 41, 152-163	2.2	2
43	Production of Multi-Gigawatt Sub-Nanosecond Microwave Pulses by the Method of Chirped-Pulse-Amplification. <i>IEEE Electron Device Letters</i> , 2021 , 42, 426-429	4.4	2
42	Generation of Powerful Subterahertz Superradiance Pulses for High-Gradient Acceleration of Charged Particles. <i>EPJ Web of Conferences</i> , 2018 , 195, 01023	0.3	2
41	Formation of microwave frequency-chirped solitons of self-induced transparency under conditions of cyclotron resonance absorption. <i>Physical Review E</i> , 2021 , 104, 034218	2.4	2
40	Frequency Conversion of High-Power Gyrotron Radiation under Conditions of Raman Backscattering on an Auxiliary Electron Beam. <i>Technical Physics Letters</i> , 2019 , 45, 134-137	0.7	1

39	Startup scenarios for an ultrashort pulse generator based on two coupled helical gyro-TWTS operating in the amplification and nonlinear absorption modes. <i>Bulletin of the Russian Academy of Sciences: Physics</i> , 2018 , 82, 53-58	0.4	1
38	Modulation of high-intensity microwave radiation during its resonant interaction with counterflow of nonexcited cyclotron oscillators. <i>Technical Physics Letters</i> , 2014 , 40, 495-498	0.7	1
37	Chaotic millimeter-wave generation on the basis of wideband gyro-amplifiers with a helical corrugated waveguide. <i>Technical Physics Letters</i> , 2017 , 43, 162-165	0.7	1
36	Formation of the transverse field structure in terahertz planar free-electron lasers. <i>Technical Physics</i> , 2011 , 56, 400-405	0.5	1
35	Generation of superradiance pulses by high-current subnanosecond electron bunches moving in a periodic slow-wave structure. <i>Technical Physics Letters</i> , 1998 , 24, 709-711	0.7	1
34	Optimization of electron bunch profile for increasing peak power of superradiance pulses. <i>Optics Communications</i> , 2004 , 231, 303-308	2	1
33	Generation of subnanosecond microwave pulses based on the Cherenkov superradiance effect. <i>Technical Physics</i> , 2002 , 47, 335-342	0.5	1
32	On the theory of the acceleration of plasma electrons during stimulated scattering of an intense laser wave. <i>Technical Physics</i> , 1999 , 44, 1-5	0.5	1
31	Cyclotron superradiance of a high-current electron bunch under group synchronism conditions. <i>Russian Physics Journal</i> , 1996 , 39, 1233-1240	0.7	1
30	Langmuir wave excitation by a sheet relativistic electron beam in a homogeneous magnetized plasma. <i>Physics Letters, Section A: General, Atomic and Solid State Physics</i> , 1994 , 186, 235-238	2.3	1
29	The Concept of a Gyrotron with Megawatt Output at Both First and Second Cyclotron Harmonics for Plasma Heating in Spherical Tokamaks. <i>Radiophysics and Quantum Electronics</i> , 2020 , 63, 345-353	0.7	1
28	Magnetron-Injection Gun with Increased Current for Frequency Tunable Medium Power Sub-THz Gyrotron. <i>Journal of Infrared, Millimeter, and Terahertz Waves</i> , 2020 , 41, 1488-1497	2.2	1
27	Frequency Multiplication in Planar Gyrotrons as a Method for Production of High-Power Multi-THz Radiation. <i>IEEE Transactions on Electron Devices</i> , 2021 , 68, 1267-1270	2.9	1
26	Time-domain model of gyroklystrons with diffraction power input and output. <i>Physics of Plasmas</i> , 2016 , 23, 033108	2.1	1
25	Stretching, Amplification, and Compression of Microwave Pulses Using Helically Corrugated Waveguides. <i>Radiophysics and Quantum Electronics</i> , 2019 , 62, 472-480	0.7	1
24	Generation of a Periodic Sequence of Ultrashort Electromagnetic Pulses in a Scheme with Two Parallel Radiating and Absorbing Electron Beams. <i>Technical Physics Letters</i> , 2021 , 47, 184-188	0.7	1
23	Generators of High-Power Ultrashort Microwave Pulses with a Saturable Absorber in a Feedback Circuit. <i>Radiophysics and Quantum Electronics</i> , 2017 , 59, 613-628	0.7	0
22	Mechanisms of Cherenkov Superradiance of Extended Electron Bunches in Oversized Corrugated Waveguides. <i>Radiophysics and Quantum Electronics</i> , 2016 , 59, 461-470	0.7	0

21	Widening of the Frequency Tuning Bandwidth in a Subterahertz Gyrotron with an External Bragg Reflector. <i>Radiophysics and Quantum Electronics</i> , 2020 , 63, 363-370	0.7	0
20	Conditions of rogue-wave generation in gyrotrons. <i>Physics of Plasmas</i> , 2021 , 28, 083302	2.1	0
19	Frequency-angle characteristics of superradiance pulses generated by ultrarelativistic electron bunches propagating in an undulator field. <i>Technical Physics Letters</i> , 2014 , 40, 72-76	0.7	
18	Mechanisms of amplification of short electromagnetic pulses in gyroresonance traveling-wave tubes. <i>Journal of Communications Technology and Electronics</i> , 2014 , 59, 798-804	0.5	
17	Generation of cyclotron superradiance pulses in an electrostatic trap pumped with an electron beam. <i>Technical Physics Letters</i> , 2015 , 41, 565-567	0.7	
16	Nonlinear dynamics of planar gyrotrons with transverse diffraction coupling of radiation. <i>Technical Physics</i> , 2012 , 57, 1135-1142	0.5	
15	Nonlinear dynamics of free electron terahertz lasers with bragg mirrors based on coupling of traveling and quasi-critical waves. <i>Technical Physics</i> , 2011 , 56, 155-163	0.5	
14	Theory of wiggler superradiance from an extended electron bunch under the group synchronism condition. <i>Optics Communications</i> , 2010 , 283, 78-83	2	
13	Absolute-instability growth rates and eigenmode structures in the electron-beam Backward-wave system with large excesses over the generation threshold. <i>Radiophysics and Quantum Electronics</i> , 2007 , 50, 281-286	0.7	
12	Nonlinear theory of channeling of radiation by a ribbon-shaped stream of cyclotron oscillators. <i>Technical Physics</i> , 1999 , 44, 6-11	0.5	
11	Theory of the undulator superradiance of an electron beam pulse in the group synchronism regime. <i>Technical Physics Letters</i> , 1999 , 25, 296-299	0.7	
10	Superradiance of short electron pulses in waveguides. <i>Nuclear Instruments and Methods in Physics Research, Section A: Accelerators, Spectrometers, Detectors and Associated Equipment</i> , 1996 , 375, 553-557 ^{1,2}		
9	Phase-Locking of Second-Harmonic Gyrotrons for Providing MW-Level Output Power. <i>IEEE Transactions on Electron Devices</i> , 2022 , 69, 754-758	2.9	
8	Generation of Terahertz Superradiance Pulses under Stimulated Scattering of Laser Radiation by an Associated High-Current Relativistic Electron Beam. <i>Technical Physics Letters</i> , 2020 , 46, 1162-1166	0.7	
7	Generation of giant pulses of scattered radiation on the moving front of a pump wave 2010 , 87, 124		
6	Increase of Gyrotron Output Power at High-Order Axial Mode Through an After-Cavity Excitation of the Next Transverse Mode. <i>Journal of Infrared, Millimeter, and Terahertz Waves</i> , 2021 , 42, 684-700	2.2	
5	Frequency modulation, amplification and compression of microwave pulses in a system with helically corrugated waveguides as a dispersive elements. <i>Journal of Physics: Conference Series</i> , 2019 , 1400, 044006	0.3	
4	Self-Induced Transparency Solitons and Dissipative Solitons in Microwave Electronic Systems. <i>Radiophysics and Quantum Electronics</i> , 2021 , 63, 716-741	0.7	

- 3 Generation of Ultrashort Microwave Pulses in Passive Mode-Locked Electron Oscillators with Homogeneous and Inhomogeneous Line Broadening. *EPJ Web of Conferences*, **2018**, 195, 01020 0.3
- 2 Frequency control in subterahertz gyrotrons. *EPJ Web of Conferences*, **2018**, 195, 01005 0.3
- 1 Entrainment, stopping, and transmission of microwave solitons of self-induced transparency in counter-propagating magnetized electron beam. *Chaos*, **2022**, 32, 053123 3.3