

CONTENTS OF VOLUME 8, 1995**Numbers 1–2**

V.E. Zuev	History of the Institute of Atmospheric Optics of the Siberian Branch of the Russian Academy of Sciences and main stages of its activity for 25 years (1969–1994)	1(1)
S.D. Tvorogov	Problem of spectral line periphery in atmospheric optics	7(18)
M.V. Kabanov	Progress in atmospheric optics and monitoring of the physical state of the atmosphere	14(31)
V.A. Banakh and V.L. Mironov	Backscatter amplification effects in laser detection and ranging through a turbulent atmosphere	23(50)
V.A. Banakh	Intensity fluctuations of laser beams in a turbulent atmosphere	33(69)
A.A. Zemlyanov	Nonlinear propagation of laser beams through the atmosphere	44(89)
V.V. Belov	Theory of linear systems in dispersion media optics	58(116)
B.D. Belan, V.E. Zuev, and M.V. Panchenko	Main results of airborne sounding of aerosol conducted at the Institute of Atmospheric Optics from 1981 till 1991	66(131)
L.N. Sinitsa	Highly sensitive laser spectroscopy of atmospheric gases	80(157)
V.I. Starikov and V.I.G. Tyuterev	Method of intramolecular interaction theory in spectroscopy of nonrigid molecules	93(181)
V.E. Zuev and G.A. Titov	Radiation effects in broken cloudiness	105(201)
Yu.N. Ponomarev	Laser photo-acoustic spectroscopy of the atmosphere	116(224)
G.G. Matvienko	Development of methods for lidar sensing of aerosol atmosphere	125(242)
E.P. Gordov	Autodyne lidars of the second generation	137(265)
V.P. Lukin	Some peculiarities of using the adaptive optical systems in the atmosphere	145(280)

Number 3

V.P. Lukin	Preface	151(299)
V.P. Lukin	Adaptive formation of beams and images in the turbulent atmosphere	152(301)
R. Ragazoni and E. Marcheti	Rayleigh vs. sodium beacon for a partial correction over wide field of view	174(342)
L.J. Sanchez P and R.G. Petrov	About the optimization of partially correcting adaptive optics	177(347)
V. Biliotti, D. Bonaccini, G. Brusa, M. Carrabba, M. Cecconi, S. Esposito, M. Gatti, E. Marchetti, and R. Ragazoni	An Italian sample of high resolution optical activities	182(356)
D.A. Bezuglov, E.N. Mishchenko, and S.E. Mishchenko	Adaptive optical systems. Methods of phase-front reconstruction and development of system structure and new element base (Review of published works)	186(364)
S.A. Pokotilo	Stabilization of image quality in atmospheric adaptive opto-electronic observational systems	194(381)
G.L. Degtyarev, A.V. Makhan'ko, and A.S. Chernyavskii	Algorithm for automatic adjustment of a segmented mirror to an arbitrary radiation source	198(388)
O.M. Vokhnik, V.A. Spazhakin, and I.V. Terent'eva	Experimental study of output energy parameters of a solid laser with SBS-mirror	201(393)
D. Bezuglov and E. Mishchenko	Optimum estimation of phase-front local tilts measured with a Hartmann sensor against the background of the Poisson noise	203(397)
E.A. Vitrichenko, G.E. Popova, S.M. Chernyavskii, and N.K. Yunusov	Statistical analysis of the wave front distortions in the atmosphere by Hartmann film	207(405)
V.P. Lukin, F.Yu. Kanev, P.A. Konyaev, and B.V. Fortes	Numerical model of the atmospheric adaptive optical system. I. Laser beam propagation in the atmosphere	210(409)
V.P. Lukin, F.Yu. Kanev, P.A. Konyaev, and B.V. Fortes	Numerical model of an atmospheric adaptive optical system. II. Wave-front sensors and control elements	215(419)

V.P. Lukin, F.Yu. Kanev, P.A. Konyaev, and B.V. Fortes	Numerical model of atmospheric adaptive optical system. III. A computer version of the model	220(429)
V.P. Lukin and B.V. Fortes	The influence of wave-front dislocations on the phase conjugation instability at compensation for thermal blooming	223(435)
N.N. Maier and V.A. Tartakovskii	Phase dislocations and minimal-phase representation of the wave function	231(448)
I.P. Lukin	Potentialities of the methods of postdetector processing of images of incoherently illuminated objects observed through a turbulent atmosphere	235(455)
V.A. Banakh, V.M. Sazanovich, and R.Sh. Tsvyk	Experimental study of high-power radiation propagation along an atmospheric path	241(467)
I.P. Lukin	Integral resolution of the turbulent atmosphere-telescope optical system	248(479)
V.M. Loginov	Solitons and stochastic noise diagnostics	251(484)

Number 4

L.E. Paramonov	Extinction matrix of an ensemble of particles with arbitrary shapes and orientation	255(499)
Yu.I. Terent'ev	Factors engendering the edge wave affected by absorptivity, thickness, and shape of a diffraction screen	262(510)
V.G. Gusev	Formation of shear interferograms by diffusely scattered light fields at a double-exposure recording of the Fourier hologram with a microscope	269(521)
A.V. En'shin	Propagation of bimharmonic laser radiation resonant to spin frequencies through the atmospheric and inert gases. Part 1	275(532)
D.N. Romashov, V.A. Yachmenev, and R.F. Rakhimov	Calculation formulas for the method of perturbation of the Mie scatterer shape on the basis of vector spherical harmonics according to the angular momentum quantum theory	280(540)
A.A. Adamenkov, Yu.N. Bulkin, Yu.N. Kolobyanin, and E.A. Kudryashov	Measurements of the NH ₃ and SO ₂ absorption coefficients at the CO ₂ -laser lines	285(549)

O.K. Voitsekhovskaya and A.B. Smirnov	Parameters of individual multiplet components in the spectrum of molecular oxygen with ^{17}O isotope	288(554)
V.I. Starikov	Approximation formulas for spectroscopic parameters of slightly asymmetric molecules with internal rotation	291(560)
V.P. Kochanov and Yu.V. Maltseva	Spectral manifestations of collisional and field interference of lines in a three-level system with split ground state	296(569)
V.G. Monoshkina and I.A. Sutorikhin	Comparative study of the aerosol spectra in the ground atmospheric layer over Altai region	301(579)
E.R. Milyutin and A.A. Taklaya	Distribution of fluctuations in a received power due to laser beamwidth fluctuations in the turbulent atmosphere	303(583)
S.I. Babkin and G.V. Grusha	Estimation of error in humidity of the turbulent atmosphere measured using the radioacoustic sounding phase difference technique	307(589)
Yu.V. Pavutnitskii, D.S. Smirnov, I.A. Fedorov, and M.V. Shilenkov	Experimental investigation of the mechanism of brightening of a dispersed medium moving in the field of high-power chemical HF cw laser radiation at low ambient pressure	311(596)
E.I. Tolkova	Interferometric techniques for constructing a triple correlation function of a remote object from a single exposure	314(602)
C. Varotsos and K.Ya. Kondrat'ev	Interrelationship between solar ultraviolet radiation and total ozone content: Observations in Greece	317(608)
C. Varotsos and K.Ya. Kondrat'ev	The tropospheric pollution and the solar ultraviolet radiation	320(614)
B.D. Belan, G.O. Zadde, and A.I. Kuskov	Spectra of the atmospheric transmission variations	323(619)
V.G. Arshinova, B.D. Belan, T.M. Rasskazchikova, A.N. Rogov, and G.N. Tolmachev	Variation of the ozone concentration in the ground atmospheric layer by the passage of atmospheric fronts	326(625)
V.M. Klimkin and V.N. Fedorishchev	Examination of the possibility to suppress background fluorescence signals from water relevant to the problems of oil films remote detection	329(632)

A.B. Gavrilovich, A.P. Ivanov, and V.E. Polyanin	Instrumentation for studying the polarization characteristics of radiation scattered by the atmosphere	333(640)
Yu.E. Pol'skii and N.V. Filippova	Interferometric counters of aerosol particles (Current status and methods of development)	337(648)
V.S. Komarov and A.V. Kreminskii	Application of MMCA* algorithms to numerical retrieval (prediction) of vertical temperature profiles in the atmospheric layer below clouds from satellite measurements	340(654)

Number 5

T.A. Sushkevich, E.L. Ignat'eva, and S.V. Maksakova	Method of spherical harmonics: exact three-dimensional models to compute density and flux of optical radiation in natural media	343(667)
S.D. Andreev, L.S. Ivlev, E.F. Mikhailov, and A.A. Kiselev	Optical characteristics of smoke particles	355(687)
D.M. Kabanov, S.M. Sakerin, and S.A. Turchinovich	Automation of solar radiation standard parameters measurements	358(693)
S.V. Loginov	Errors in reconstructing the vertical profile of the aerosol scattering coefficient from the data of sounding of the twilight earth's atmosphere	361(697)
A.V. En'shin	Propagation of biharmonic laser radiation resonant to spin frequencies through atmospheric and inert gases. Part 2	363(701)
I.G. Zakharova, Yu.N. Karamzin, and V.A. Trofimov	Some problems of compensation for the distortions of optical beams. Self-action and random distortions of profiled beams	366(706)
B.D. Borisov and V.A. Krutikov	On remote detection of spatial anomalies of the wavy sea surface	371(714)
M.L. Belov	Lidar return power in the case of sounding the atmosphere along a slightly slant path over foam covered sea surface	376(724)
V.G. Arshinova, B.D. Belan, and T.M. Rasskazhikova	Results of climatic-ecological monitoring at TOR station. 1. Synoptic regime and meteorological parameters	380(732)

V.S. Komarov and V.A. Remenson	Global–regional statistical models of the atmosphere as an informational basis for spaceborne observational systems	386(741)
N.S. Kirillov and I.G. Polovtsev	Optimization of the Schmidt system by the compensation method	391(751)
A.G. Il'in and Yu.E. Pol'skii	Structure and information content of narrow–band noise in lidar heterodyne detection systems	394(757)
G.I. Il'in, O.G. Morozov, Yu.E. Pol'skii, V.T. Ternovskov, and N.G. Khairullin	Source of pulsed excitation energy for lasers of lidars	397(762)
A.B. Gavrilovich	Spectropolarimetric video system for optical investigations of the atmosphere	399(766)
B.A. Tarashchanskii, R.R. Mirgazov, and K.A. Pocheikin	BURKHAN stationary deep-water meter of hydrooptical parameters	402(771)
V.A. Korshunov	A modification of local estimation of lidar signal by Monte Carlo method with simultaneous simulation of forward and backward photon trajectories	404(775)
A.I. Isakova and G.M. Igonin	Adaptive time filtration of lidar returns	407(782)
S.D. Andreev and L.S. Ivlev	Modeling of the aerosol optical characteristics in the atmospheric ground layer within 0.3–15 μm spectral range. I. Principles of constructing models	410(788)
N.A. Vostretsov and A.F. Zhukov	On saturation of laser signal fluctuations in snowfall recorded by a nonpoint receiver	414(796)
A.P. Rostov	Versatile multi–channel analog–to–digital converter for experimental study of the atmosphere	415(798)

Number 6

Yu.I. Terent'ev	Investigation of factors engendering the edge light and peculiarities of its formation in optically denser and less dense media	419(811)
G.Ya. Patrushev , A.P. Rostov, and O.A. Rubtsova	Moments and probability density of saturated intensity fluctuations in the turbulent atmosphere	423(819)

A.G. Prygunov, V.P. Sizov, and D.A. Bezuglov	Method for object movement determination based on analysis of optical field wavefronts using reference holograms	427(826)
K.T. Protasov	Pattern recognition and automated classification of multicomponent video images under condition of statistical indeterminacy	430(831)
Yu.N. Isaev and E.V. Zakharova	Laser beam intensity reconstruction from temperature field of a thin target	435(841)
B.V. Kaul'	Lidar determination of oriented particles in crystal clouds	439(847)
D.M. Kabanov and S.M. Sakerin	Results of investigations of the atmospheric water vapor column density using an optical hygrometry method. Part 1. Analysis of the method and results of its calibration	442(852)
A.V. Fabrikov, N.L. Stal', and O.I. Aldoshina	Estimating the coordinates of a pulsed isotropic radiation source by the difference range finding method from the data of observation through clouds	447(861)
V.M. Dorokhov and T.E. Potapova	Observations about the total ozone content in the atmosphere in high arctic latitudes	451(868)
B.D. Belan, V.E. Meleshkin, I.E. Meleshkina, and G.N. Tolmachev	Results of climatic-ecological monitoring at the TOR station. II. Gaseous composition of near-ground air	455(875)
V.S. Shamanaev	Potential of laser sensing of circumterrestrial space	460(885)
S.I. Dolgii, V.V. Zuev, V.A. Kazyurin, V.N. Marichev, and A.I. Petrov	Preliminary results of experimental investigations of spectral sky brightness in the UV spectral range	464(893)
A.K. Kuz'min and K.N. Chikov	Panoramic imaging monochromatic cameras for remote diagnostics of ionosphere and upper atmosphere from satellites	466(897)
A.V. Sinyavskii	Diffuse path reflector	473(910)
K.V. Gurkov, G.E. Kulikov, and V.P. Lopasov	Simple bichromatic laser emitter	475(914)
R.F. Rakhimov and D.M. Romashov	Dependence of the light scattering phase matrix of crystal clouds on orientation and characteristic size of particles	477(917)

A.V. Vasil'ev and L.S. Ivlev	Numerical simulation of optical characteristics of spherical particles polydispersions	479(921)
I.V. Kuznetsova and V.A. Fedorov	Enhancement of the speed of spectral analysis of the analytical signals	484(929)
Number 7		
V.S. Komarov	Foreword	487(939)
V.S. Komarov and A.V. Kreminskii	Optimal combination of alternative methods for spatial forecasting in problems of atmospheric ecological monitoring. I. Methodology and algorithms	488(941)
V.S. Komarov and A.V. Kreminskii	Optimal combination of alternative methods for spatial forecasting in problems of atmospheric ecological monitoring. II. Results of numerical experiments	496(958)
A.A. Isaev	Method of forecasting the annual trend of meteorological conditions for problems of atmospheric monitoring	501(966)
P.N. Belov	Reconstruction of air pollution field in geographic regions based on a pollution transfer model	507(977)
V.S. Komarov, S.A. Soldatenko, and S.S. Suvorov	Investigation of the sensitivity of models of pollutant transfer in the atmosphere (model and procedure)	511(985)
S.A. Soldatenko, S.S. Suvorov, O.M. Sobolevskii, and V.S. Komarov	Identification of sources of atmospheric pollution	515(993)
P.N. Belov and V.S. Komarov	Theoretical model of radionuclides spread after possible industrial emergency	519(1001)
R.F. Rakhimov	Modelling of the aerosol processes for forecasting the vertical variability of light scattering parameters	523(1009)
V.S. Komarov, S.A. Soldatenko, and A.N. Borisov	Method for forecasting the optical characteristics of the perturbed aerosol-cloudy atmosphere	534(1030)
V.S. Komarov, V.I. Akselevich, A.I. Grishin, A.V. Kreminskii, N.Ya. Lomakina, and G.G. Matvienko	Simulation and extra short-term forecast of wind characteristics from the data of lidar wind sounding	539(1039)

A.I. Grishin, A.E. Zil'berman, and G.G. Matvienko	Lidar sensing of atmospheric precipitation	545(1048)
A.I. Grishin and G.G. Matvienko	Lidar investigations of atmospheric aerosol in the wind shear layers	549(1056)
E.V. Yarkho	Annual variations in atmospheric aerosol optical depth typical of different climatic zones	553(1063)
D.M. Kabanov and S.M. Sakerin	Variability of total and spectral direct solar radiation fluxes in the vicinity of Tomsk in spring of 1993	558(1073)
E.I. Nezval'	UV-radiation trends in Moscow	563(1081)
V.I. Akselevich and A.V. Tertyshnikov	Methodology of ecological monitoring data application to seismic forecasting	567(1090)
A.I. Brodovich, S.A. Ikonnikov, E.I. Shabakov, and A.N. Kalinenko	Theory of numbers as applied to systolization of algorithms for numerical handling of images	570(1097)
Yu.V. Gridnev and K.T. Protasov	Segmentation of multidimensional images by clustering algorithm based on a bilateral criterion for homogeneity	574(1103)
M.V. Panchenko, V.V. Pol'kin, S.A. Terpugova, A.G. Tumakov, V.P. Shmargunov, and E.P. Yausheva	The formation of average regional aerosol background	579(1112)
M.V. Kabanov and S.L. Odintsov	Annotated report on the project of climatic- ecological monitoring of Siberia as part of the regional scientific-engineering program Siberia	581(1115)

Number 8

T.I. Velichko, S.N. Mikhailenko, and V.I.G. Tyuterev	Spectroscopic parameters and potential function of HCl molecule	587(1131)
V.V. Zuev, M.Yu. Kataev, M.M. Makogon, and A.A. Mitsel'	Differential absorption lidar method. Current status of research	590(1136)
A.A. Zemlyanov and A.M. Kabanov	Energy thresholds and temporal characteristics of explosive boiling up and vaporization of aerosol particles in a CO ₂ -laser radiation field	609(1165)
A.M. Sagalakov and A.M. Shaiduk	Propagation of limited laser beams in the inflammable aerosol	612(1170)

V.N. Marichev	Determination of the integral content of atmospheric trace gases from zenith measurements of the spectral sky brightness	615(1175)
V.K. Kozlov and V.V. Turkin	Sounding of underlying surface using a fluorescent lidar	618(1180)
M.Yu. Arshinov, B.D. Belan, V.K. Kovalevskii, and G.N. Tolmachev	Results of climatic-ecological monitoring at TOR station. III. Atmospheric aerosol	620(1185)
S.N. Volkov and A.I. Nadeev	Efficiency of Raman lidar sounding of temperature profiles and scattering ratio with adaptive smoothing of signals	624(1191)
A.L. Afanas'ev, G.Ya. Patrushev , and A.P. Rostov	Preliminary results of the experimental study of a model for the spectral tensor of the wind velocity field in the ground atmosphere	627(1195)
A.A. Popov	Applicability limits of the method of physical optics in the problems of light scattering by large crystals. II. Scattering by a rectangular plate	630(1199)
A.V. Prokopov	Some aspects of the theory of astronomical refraction in the earth's atmosphere	634(1206)
A.V. Fabrikov, O.I. Aldoshina, and A.V. Mamaeva	Estimation of time delays by the method of adaptive filtering with spline smoothing of signals	638(1213)
V.V. Dyomin and V.V. Sokolov	Holographic recording of optically soft microparticles. Computational procedure	641(1218)
S.D. Andreev and L.S. Ivlev	Modeling of optical characteristics of near-ground atmospheric aerosol in the 0.3–15 μm wavelength range. II. Model of aerosol composition and structure	646(1227)
S.D. Andreev and L.S. Ivlev	Modeling of optical characteristics of near-ground atmospheric aerosol in the 0.3–15 μm wavelength range. III. Results of modeling	651(1236)
V.V. Veretennikov	Determination of aerosol microstructure from particle shadow correlation function by the method of the Fourier-Bessel series expansion	656(1244)
K.M. Firsov and A.B. Smirnov	Representation of transmission functions by exponential series	659(1248)

Number 9

R.F. Rakhimov	Change of optical and microphysical properties of aerosols during diffusion and sedimentation spread of anomalous aerosol layers in the mesosphere	663(1259)
A.A. Popov	Applicability limits of the method of physical optics in the problems of light scattering by large crystals. III. Scattering by an infinitely long plate	667(1266)
E.V. Makienko, Yu.A. Pkhalagov, R.F. Rakhimov, V.N. Uzhegov, and N.N. Shchelkanov	Analysis of microstructure features of the winter haze aerosol using the results of optical measurement data inversion	671(1272)
A.I. Zhukov and M.A. Fedorov	Spatial and seasonal distribution of the molecular absorption of long-wave optical radiation in the atmosphere over northern part of the world's ocean	676(1280)
G.Ya. Patrushev and O.A. Rubtsova	Phenomenological study of the probability density of the intensity fluctuations in turbulent atmosphere	679(1284)
I.M. Sizova	Photodissociation and recombination of the ozone molecules	682(1289)
V.I. Bukatyi and T.K. Kronberg	Optical characteristics of heat-mass-halo of a carbon particles evaporating in a laser field	700(1314)
V.P. Aksenov	Phase problem, wave-front dislocations and equation for the two-dimensional optical field intensity	703(1319)
D.V. Vlasov, E.V. Zubkov, and S.I. Shamaev	Inversion of the lidar equation providing for small-angle scattering	706(1324)
Yu.S. Balin, I.V. Znamenskii, V.E. Zuev, V.E. Mel'nikov, S.V. Samoilova, and A.A. Tikhomirov	Russian spaceborne lidar "BALKAN"	711(1332)
V.V. Zuev and O.A. Romanovskii	Gas analysis of the atmosphere by the differential absorption method using CO ₂ lasers with different lasing line widths	718(1344)
B.D. Belan, E.V. Pokrovskii, T.M. Rasskazchikova, and G.N. Tolmachev	Results of climatic-ecological monitoring at the TOR station. IV. Estimation of the effect of urban environment	721(1349)

P.K. Koutsenogii, N.S. Bufetov, E.I. Kirov, and S.I. Shuiskii	Dynamics of diurnal and seasonal cycles of aerosol formation in the atmosphere as it follows from measurements in Novosibirsk region	725(1355)
V.V. Butov and S.V. Loginov	Reconstruction of the aerosol microphysical characteristics and ozone concentration from satellite observations of the Sun	732(1366)
D.I. Shelefontyuk	Photon counting systems for laser sounding of the atmosphere	737(1374)
V.V. Zuev, A.A. Mitsel', I.V. Ptashnik, and K.M. Firsov	Effect of doppler broadening of return signals on the accuracy of reconstructing the H ₂ O profiles from lidar data	740(1378)
E.P. Gordov and A.Z. Fazliev	Qualitative analysis of the oxygen atmospheric model. ii. the source–sink pairs	743(1383)
V.L. Veber	Numerical models for spatial correlation functions of wind wave slopes as applied to some problems of sea optics	751(1394)
S.V. Afonin, V.V. Belov, and I.Yu. Makushkina	Simulation of upwelling thermal radiation scattered by aerosol allowing for surface temperature inhomogeneities. I. Point spread function	756(1402)
V.A. Kapitanov, G.E. Kulikov, and V.I. Tyryshkin	Single–frequency dye laser with frequency tuning controlled by a program	763(1411)
A.V. Bukharin and S.M. Pershin	Comments	766
Number 10		
G.A. Titov and T.B. Zhuravleva	Spectral and integrated absorption of solar radiation in broken clouds	767(1419)
B.V. Kaul'	Polarization anisotropy of light multiply backscattered on spherical particles	772(1428)
O.V. Shefer	Theoretical investigation of optical radiation attenuation by crystalline aerosol	776(1435)
V.A. Khlusov	Parametrization of the backscattering phase matrix of nonreciprocal media	779(1441)
V.A. Khlusov	Characteristic equation for the backscattering phase matrix of reciprocal media	782(1446)

M.R. De Backer, D. Courtois, Yu.N. Ponomarev, and B.A. Tikhomirov	Combined spectrometer with a cw diode laser	785(1451)
I.N. Smalikhov	On measurement of the dissipation rate of the turbulent energy with a cw Doppler lidar	788(1457)
V.A. Banakh, V.M. Sazanovich, and R.Sh. Tsvyk	Mean intensity of a reflected wave in a turbulent medium	794(1467)
L.V. Antoshkin, N.N. Botygina, O.N. Emaleev, and V.P. Lukin	Efficiency of image correction when compensating for random wave-front tilt angles of radiation passed through the turbulent atmosphere	798(1472)
Yu.E. Geints, A.A. Zemlyanov, and E.K. Chistyakova	Threshold of stimulated Raman scattering (SRS) in transparent drops	803(1480)
K.T. Protasov	Rereconstruction of overcast fragments of video images as applied to statistics of satellite observations	808(1488)
V.V. Zuev, A.V. El'nikov, V.D. Burlakov, M.V. Grishaev, and V.L. Pravdin	Laser sounding of stratospheric aerosol at 532 and 1064 nm wavelengths under SATOR and LITE programs in 1994	813(1496)
A.I. Zhukov, D.Ya. Kovalevskii, and M.A. Fedorov	Experimental detection of thermal blooming of an optical beam in an outdoor atmosphere	817(1501)
I.A. Razenkov, A.P. Rostov, and N.A. Shefer	Preliminary results of laser-acoustic experiment on the study of the backscattering coefficient fluctuations in the atmospheric surface layer	820(1506)
N.P. Krasnenko and L.G. Shamanaeva	Effect of underlying surface on acoustic wave propagation near the ground	827(1517)
S.N. Volkov, B.V. Kaul', V.A. Shapranov, and D.I. Shelefontyuk	Some problems of selection of the narrow spectral intervals for purposes of laser sounding of the atmosphere	833(1527)
Yu.I. Grin', A.V. Vernik, S.F. Zhuravlev, V.N. Moiseev, I.N. Nemtsov, V.A. Polunin, R.N. Pikhtelev, P.G. Filippov, and O.V. Shoronov	Long-path absorption IR-laser-based gas analyzer of the atmosphere with a difference frequency generator	836(1531)
Yu.N. Isaev	Analytical technique for determining vector orthogonal polynomials of the phase gradient for arbitrary geometry of a receiving aperture	841(1539)
G.G. Matvienko, O.V. Kharchenko, and T.A. Yarchuk	Choice of a wavelength of lidar system operation in an eye-safe spectral region	843(1542)

G.A. Terez	On accuracy of separating the atmospheric spectral transparency into components	845(1545)
A.A. Mitsel', I.V. Ptashnik, K.M. Firsov, and B.A. Fomin	Efficient technique for line-by-line calculating the transmittance of the absorbing atmosphere	847(1547)
Number 11		
	Foreword	(1555)
A.M. Boichenko F.V. Karelin and S.I. Yakovlenko	Kinetic model of the XeF laser	852(1557)
A.V. Karelin and S.I. Yakovlenko	Numerical simulation of a He-Ne-Ar-H ₂ laser pumped by a hard ionizer	859(1568)
V.V. Lisenkov and V.V. Osipov	Numerical modeling of plasmochemical processes in active media of XeF and XeCl lasers pumped by a long pulse	864(1575)
A.Yu. Kropanev, A.N. Orlov, and V.V. Osipov	Pulse-periodic XeCl laser with a system of gaseous mixture regeneration	867(1579)
E.F. Balbonenko, V.A. Basov, V.A. Vizir', I.N. Konovalov, V.V. Chervyakov, and N.G. Shubkin	10 J discharge XeCl laser	871(1586)
N.G. Ivanov, S.E. Kovalenko, V.F. Losev, and Yu. N. Panchenko	The XeCl laser system with high spectral brightness	873(1590)
A.M. Boichenko, R.I. Golyatina, S.A. Maiorov, and S.I. Yakovlenko.	Investigation of the volume lamp sources of emission	776(1595)
M.I. Lomaev, A.N. Panchenko, and V.F. Tarasenko	Use of inductive energy storage generators for excitation of pulsed gas lasers	883(1606)
M.G. Ivanov, S.V. Mukhachev, and V.V. Osipov	High power CO ₂ laser with a combined exitation system	889(1616)
A.V. Nikiforov and A.N. Orlov	Repetitive pulsed TE-CO ₂ laser with a Q-switched resonator and long radiation pulse	892(1622)
A.N. Soldatov, V.B. Sukhanov, V.F. Fedorov, and N.A. Yudin	Investigation of the CU-vapor laser with improved efficiency	894(1626)

V.F. Elaev	Measurement of the coefficients of resonance electron trapping by autoionization states of the Cu atom	901(1637)
V.N. Ivanov	Conversion of the visible coherent radiation into the infrared one	905(1642)
L.P. Vorob'eva, G.S. Evtushenko, V.M. Klimkin, M.M. Makogon, V.G. Sokovikov, N.A. Filonova, and V.A. Chikurov	Use of a copper vapor laser for remote sensing of iodine radionuclides	908(1648)
V.T. Karpukhin, Yu.B. Konev, and M.M. Malikov	Sum frequency generation from copper vapor lasers	911(1652)
A.L. Etsina, L.N. Butenko, and I.Sh. Etsin	Laser beam divergence meter	915(1658)
T.V. Budtova, I.E. Suleimenov, and Yu.A. Tolmachev	Adaptive optical systems based on strongly swelling polyelectrolytic hydrogels	917(1662)
A.I. Fyodorov	Some possibilities of increasing the efficiency of N ₂ lasers pumped with an electric discharge	918(1664)
S.B. Alekseev and V.M. Orlovskii	Atmospheric pressure miniature nitrogen laser	921(1669)
M.I. Dzyubenko, V.V. Maslov, V.P. Pelipenko, V.V. Shevchenko, S.M. Pilipenko, S.Yu. Kavetskas, A.A. Erokhin, L.P. Sorokin, and I.A. Usov	Zond-1 laser lithotripter	923(1672)
S.V. Nikolaev and V.V. Pozhar	Some peculiarities in formation of the polarization of a flash-lamp pumped dye laser radiation	925(1676)
M.A. Buldakov, N.A. Zvereva, I.I. Ippolitov, and A.F. Terpugova	Photodissociation of water vapor by UV laser radiation	927(1679)
P.A. Vorotnev, A.G. Zhiglinskii , A.M. Izmailov, A.P. Lyutikov, and V.A. Ozolov	Investigation of partially violated mode competition in polychromatic pulsed dye laser	930(1683)
V.G. Lizogub and V.S. Topuchkanov	Thyratron heating stabilization unit used in pulse-periodic lasers	933(1687)

V.G. Lizogub and V.S. Topuchkanov	Small-size power supply unit developing a 20 kV output voltage	935(1690)
S.E. Karmazin, A.N. Kuryak, M.M. Makogon, and A.L. Tsvetkov	Automated fluorescence laser spectrometer	937(1692)
A.S. Polyakevich and B.N. Poizner	Advantages of group analysis of differential equations in solving the problems on optimal control of laser systems	940(1697)
O.V. Cheremisina, V.A. Evtushenko, and A.N. Soldatov	Prophylaxis and treatment of complications in lung cancer patients after combined treatment (operation + IORT)	942(1701)
G.S. Evtushenko, V.P. Lopasov, V.V. Tatur, V.V. Startsev, V.Yu. Kashaev, and V.G. Lizogub	Laser show systems	945(1704)
	Wide-aperture exciplex and excimer lamps	946(1706)
Number 12		
	Second Interrepublic Symposium on Atmospheric and Ocean Optics	947(1715)
V.E. Zuev, Yu.S. Balin, V.V. Zuev, G.G. Matvienko, and A.A. Tikhomirov	State of the art and prospects for the development of the BALKAN series spaceborne lidars	949(1718)
V.A. Banakh, Ch. Werner, N.N. Kerkis, F. Kopp, I.N. Smalikho	Turbulence measurements with a cw Doppler lidar in the atmospheric boundary layer	955(1726)
V.P. Lukin and B.V. Fortes	Ground-based spatial interferometers and atmospheric turbulence	960(1733)
B.A. Fomin	Benchmark calculations of radiative fluxes and influxes in the atmosphere: history, methods, state of the art, and prospects	966(1743)
N.I. Komarov and I.M. Shkedov	Laser radiation absorption by dense sodium vapor	972(1752)
Yu.V. Kistenev and I.A. Shevchuk	Spontaneous soliton formation in the region of resonant absorption of molecular media	975(1757)
M.V. Panchenko and S.A. Terpugova	Seasonal factors of the variability of the submicron aerosol characteristics. I. Air masses	977(1761)

S.M. Sakerin, D.M. Kabanov, and V.V. Pol'kin	Optical investigations of the atmosphere during the 35th mission of the research vessel Akademik Mstislav Keldysh	981(1767)
V.P. Pelevin and V.V. Rostovtseva	Estimation of chlorophyll concentration in sea water from measurements of spectral index of vertical light extinction	989(1778)
I.V. Antoshkin, N.N. Botygina, O.N. Emaleev, L.N. Lavrinova, V.P. Lukin, A.P. Rostov, B.V. Fortes, and A.P. Yankov	Investigation of turbulence spectrum anisotropy in the ground atmospheric layer. Preliminary results	993(1784)
N.A. Vostretsov and A.F. Zhukov	Probability density of light flux fluctuations in a narrow divergent laser beam under snow fall conditions	997(1790)
V.A. Banakh, V.M. Sazanovich, and R.Sh. Tsvyk	Intensity fluctuations of laser radiation reflected from a disc of finite size	1004(1799)
B.V. Goryachev, M.V. Kabanov, and S.B. Mogil'nitskii	Radiation propagation through spatially bounded media with high concentration of scatterers	1010(1807)
S.V. Afonin, V.V. Belov, and I.Yu. Makushkina	Simulation of upwelling thermal radiation scattered by aerosol allowing for surface temperature inhomogeneities. II. Large-scale gradients	1013(1812)
Yu.E. Geints and A.A. Zemlyanov	Theoretical model of sound generation due to phase changes in a liquid aerosol particle	1020(1821)
V.V. Kolosov	Influence of fluctuations of the refractive index of an active medium on the characteristics of the X-ray laser emission	1023(1825)
G.A. Titov and E.I. Kas'yanov	Solar radiative fluxes in the inhomogeneous stratus clouds	1028(1833)
S.M. Prigarin and P.I. Sidorov	Simulation of the increase of the solar radiation intensity near the earth's surface under cloudy conditions	1035(1843)
L.G. Shamanaeva	Determination of the outer scale of the atmospheric turbulence from the data of acoustic measurements	1038(1847)
V.S. Komarov, V.A. Akselevich, A.V. Kreminskii, G.G. Matvienko	On the applicability of wind lidar measurements to investigations of local and regional climates	1041(1851)
V.S. Komarov, V.S. Akselevich, A.V. Kreminskii, and H.Ya. Lomakina	Regional climatic models of wind and temperature altitude distributions in the atmospheric boundary layer	1044(1855)

V.V. Reino, A.S. Tobolkin, and M. V. Sherstobitov	Thermography of local inhomogeneous plasma formations	1052(1866)
J.I. Il'in, O.G. Morozov, and Yu.E. Pol'skii	LFM lidar with frequency conversion	1055(1871)
A.V. Makhan'ko	Dynamically balanced X-Y-Z actuator of a segment of a controllable mirror	1058(1875)
F.Yu. Kanev, L.N. Lavrinova, V.P. Lukin	Dynamic adaptive mirror in the algorithm of phase conjugation	1061(1879)
V.P. Aksenov, V.A. Banakh, E.V. Zakharova, Yu.N. Isaev, and O.V. Tikhomirova	Diffraction tomographic wave front sensor	1065(1884)
N.N. Mayer and V.A. Tartakovski	Relation between conjugation error and inverted field amplitude deviation	1069(1889)