

CONTENTS OF VOLUME 3, 1990

Number 1

V.A. Korshunov	Dependence of the multiple scattering contribution to lidar returns on the integral parameters of the cloud particle size spectrum	1(5)
S.V. Ivanov and V.Ya. Panchenko	Nonstationary absorption of radiation within a vibrational band with a random rotational structure	7(12)
T.G. Adiks	IR-spectroscopic studies of atmospheric absorption characteristics (literature review)	11(16)
A.P. Godlevskii, E.P. Gordov, A.I. Zhiliba, and P.P. Sharin	Doppler lidar with CO ₂ -laser intracavity reception	20(25)
V.P. Lopasov	A mechanism for rotational excitation of molecules	25(31)
L.S. Ivlev, V.G. Sirota, and S.N. Khvorostovskii	Influence of oxidation of volcanic sulfur dioxide on sulfuric acid aerosol and ozone levels in the stratosphere	30(37)
A.A. Popov and O.V. Shefer	A simple interpretation scheme for data of polarization laser sounding of crystalline clouds	36(44)
K.T. Protasov	Linear models of multidimensional fields in the Karhunen-Loeve basis	42(51)
V.D. Tudrii and A.A. Feshchenko	Procedure for processing satellite photographs for the estimation of morphometric cloudiness parameters	47(56)
A.N. Kalinenko and T.G. Teushchekova	Methods of self-organization of models in problems of physical-statistical prediction of altitude profiles of the temperature	50(60)
V.A. Trofimov	Increased speed of wavefront adaptive control of light beams by the multidither algorithm. Part I. Algorithm construction	57(68)
V.A. Trofimov	Increased speed of wavefront adaptive control of light beams using the multidither algorithm. Part II. Practical realization of the algorithm	62(74)
A.G. Ishov and N.V. Krymova	Multiline representation of the total absorption of radiation in molecular bands	66(79)
V.V. Kolosov and S.I. Sysoev	Analysis of some algorithms for minimizing the angular divergence of partially coherent optical radiation	70(83)
O.I. Aldoshina, M.N. Gorshkov, and A.N. Rublev	Pulse response of the cloudy atmosphere calculated at large zenith angles for optical path thickness from 1 to 100 taking into account the spherical geometry of the earth	77(90)
A.G. Laktionov, N.A. Lutseva, V.A. Mironenko, and V.S. Suetin	Outgoing shortwave radiation over the Atlantic: "INTERCOSMOS-21" satellite data model	84(97)
V.M. Dorokhov	Observations of the total ozone content in the arctic over Heiss Island (81°n) in winter 1989	89(102)
A.G. Aristov, L.Ya. Margolin, V.I. Pilskii, L.Ya. Polonskii, and L.N. Pyatnitskii	Initial stage of spark generation and development in a "diffraction-free" laser beam	95(107)

Number 2

V.A. Korshunov	Account of multiple scattering effects during lidar sounding of cloud media	101(115)
I.A. Chertkova, S.S. Chesnokov	Minimization of phase distortions for a laser beam propagating through convective drafts	108(123)
I.L. Katsev and E.P. Zege	Comparison of the detection capabilities of television and lidar systems in scattering media	114(130)
I.K. Babaev, M.S. Belkin, V.N. Koterov, G. Krasnovskii, and N.V. Cheburkin	Propagation of wide-aperture laser beams through the atmosphere	119(136)
B.V. Goryachev, M.V. Kabanov, and B.A. Savel'ev	Optical radiative transfer trough a bounded scattering	125(142)
A.D. Bykov, V.A. Kapitanov, S.M. Kobtsev, and O.V. Naumenko	Detection and analysis of the $5v_3$ absorption band in HD^{16}O	133(151)
A.A. Artemov, N.F. Borisov, and V.M. Osipov	Atmospheric absorption of radiation from various types of iodine photodissociation lasers	141(164)
N.S. Pugachev, A.G. Bessonov, and A.S. Smirnov	Ground-based measurements of the atmospheric column density of ethane (C_2H_6) and acetylene (C_2H_2) based on high-resolution solar IR spectra	146(170)
O.I. Vasilev and S.S. Lebedev	Using a stimulated Brillouin scattering PC mirror to correct thermal beam distortions in a moving medium	150(174)
V.I. Kirakosyants, V.A. Loginov, and V.V. Slonov	Potential characteristics of the WFR algorithm for observations of extended targets	157(182)
A.I. Zhiliba	Highly sensitive radiation detection with a two-frequency laser. dynamic description	163(188)
L.N. Pavlova	Photoelectric instruments and the measurement of aerosol microstructure	168(194)
S.N. Volkov	An integrated lidar technique for studying the lower atmosphere	174(202)
S.V. Butsev	Choosing the Gaussian response function parameter for an adaptive mirror	178(207)
P.A. Bakut, V.N. Leksina, and A.D. Ryakhin	Effect of quantization noise on the accuracy of speckle interferometry	181(209)
D.A. Bezuglov, E.N. Mishchenko, and V.L. Tyurikov	Dynamical characteristics of a segmented phase-front corrector for adaptive optics systems	184(211)
Yu.N. Grachev and G.M. Strelkov	Combustion of shoot particles during propagation of laser beams through a turbid atmosphere	187(213)
V.I. Bukatyi, A.E. Kaplinskii, A.M. Shaiduk, and I.A. Sutorikhin	Dynamics of the radius and temperature of a particle of a wet carbon aerosol in the course of its combustion in a powerful optical field	190(216)
S.P. Istomin and M.Yu. Sverdlov	Diagnostics of the thermal track of a powerful laser beam	194(218)
G.V. Kolarov	Contribution of previous ranging pulses to the error in a lidar signal	198(221)

Number 3

V.L. Krauklis, G.A. Nikol'skii, M.M. Safronova, and E.O. Shul'ts	On the conditions for the appearance of anomalies in the aerosol extinction of UV radiation in a clear atmosphere	201(227)
N.I. Gorshkova, O.M. Korostina, and V.A. Smerkalov	Spectral extinction coefficients and asymmetry of scattering of light by aerosol with weighted-mean particle-size spectrum	214(242)
M. Begkhanov, O. Kurbanmuradov, V.N. Lebedinets, and G. Chopanov	Semiempirical models of the aerosol composition of the upper atmosphere. I. Sedimental model	219(248)
A.A. Buznikov and A.I. Dem'yanikov	On optimal measurements of the transmission in the visible region on tangential paths	227(257)
Yu.N. Ponomarev	Absorption of laser radiation by aerosol particles in an atmosphere counting of a resonantly absorbing gas	232(262)
S.D. Tvorogov and V.O. Troitskii V.A. Banakh, A.R. Larichev, V.M. Sazanovich, R.Sh. Tsvykh, and B.N. Chen	Frequency summing in focused beams Effect of atmospheric turbulence on the refraction-induced of the image of an optical source	235(266) 242(273)
S.V. Polyakov and V.A. Trofimov	On the defocusing of a light beam under conditions of strong nonlinear response of the medium	247(279)
D.A. Bezuglov and A.A. Vershigora	Reconstruction of the phase front in a basis of orthogonal functions from measurements with a Hartman type sensor	251(284)
V.K. Oshlakov	Combined signal model in problems of interpretation of photometric measurements of cloud fields	255(289)
S.G. Balashov, A.A. Pakhomov, A.D. Ryakhin, and Ya.A. Sadykov	On the restoration of images distorted by symmetric blurring	260(294)
A.B. Murynin and E.A. Lupyan	Reconstruction of the spatial spectral characteristics of the ocean-atmosphere boundary from optical sounding data	264(299)
D.V. Vlasov, O.K. Kostko, N.N. Kostko, and G.F. Tulinov	The possibility of using lidars for studying artificial clouds of barium and barium oxide in the upper atmosphere	271(306)
V.A. Lyadzhin, B.T. Tashenov, and T.P. Toropova	Some results of single-frequency sounding of the stratospheric aerosol	277(312)
M.K. Shaikov, E.A. Chayanova, and E.V. Ivanov	New method and correlation spectrometer for remote measurement of the nine dioxide content in the atmosphere	285(320)
S.G. Zvenigorodskii, V.U. Khattatov, and S.P. Smyshlyayev	Prediction of the ozonosphere for different CFC emission scenarios on a 1- D photochemical model	289(325)
A.I. Nadeev and K.D. Shelevoi	Determination of the accuracy of measuring systems by statistical methods	294(330)
E.P. Gordov, A.I. Zhiliba, and M.M. Makogon	Intracavity laser spectroscopy with nonlinear frequency converter and an external signal	298(333)
M.V. Kabanov, A.S. Kolevatov, I.A. Razenkov, T.N. Kopylova, A.N. Kitris, and K.M. Degtyarenko	XeCl-excimer-laser multifunctional differential absorption and scattering lidar	301(335)

Number 4

R.F. Rakhimov	Gravitational sedimentation distortions of the particle size spectrum and profiles of light scattering parameters in the atmospheric mixing layer	305(339)
Yu.A. Lebedinskii	On the transmittance of a layer of nonspherical spatially oriented scattering particles	315(349)
L.N. Sinitsa and G.A. Vandysheva	Investigation of H absorption spectrum for the "2-0" transition induced by electric field. I. Determination of energy of the vibrational-rotational levels	320(354)
G.A. Vandysheva, V.N. Savel'ev, and L.N. Sinitsa	Investigation of absorption spectrum for the "2-0" transition induced by electric field. II. Determination of the matrix elements of the polarizability tensor	325(360)
G.I. Kozin, V.V. Petrov, and E.D. Protsenko	A thermorefractive phase technique for analyzing gas composition of the atmosphere with a two-mode gas laser	329(364)
A.A. Vlasov, E.N. Kadygov, E.A. Kuklin, V.V. Glyzin, and O.A. Lovtsova	Experimental determination of low-pressure spectral line intensities in the 5-mm O ₂ band	333(368)
Yu.N. Ponomarev and S.K. Potapov	Electrical properties of resonant gaseous media	337(373)
A.V. Belinskii	Parametric generation of squeezed quantum states of radiation and the possibility of their application to optical communications	343(380)
G.S. Bordonskii	Possible traces of a natural laser emission of the Earth's atmosphere	352(390)
P.A. Bakut, I.A. Rozhkov, and A.D. Ryakhin	On the potential resolution of passive image-forming methods through turbulent atmosphere. I. Speckle-interferometry in traditional telescopes	356(394)
P.A. Bakut, I.A. Rozhkov, and A.D. Ryakhin	On the potential resolution of passive image-forming methods through turbulent atmosphere. II. Speckle-interferometry in synthesized telescopes	360(398)
O.I. Aldoshina, V.V. Bacherikov, E.E. Limar, and V.A. Fabrikov	Regression model for cloud-top height distribution over continents, based on data of FGGE international experiment	366(404)
A.I. Dem'yanikov and A.A. Kutepov	Remote sensing of terrestrial mesospheric temperatures by modulation spectroscopy method with breakdown of LTE taken into account	376(414)
A.N. Krasovskii, L.N. Turyshev, L.Ch. Neverovich, A.M. Lyudchik, S.D. Ashkinadze, and A.I. Kot	On studying vertical profiles of the aerosol optical density by helicopter UV-Photometers	381(420)
M.L. Belov and V.M. Orlov	Airborne lidar sensing of foam-covered sea surface: the image illuminance structure	387(426)
V.K. Oshlakov	Photometric detection of clouds along the instrument sighting line	392(431)
V.V. Krasnikov, M.S. Pshenichnikov, T.B. Razumikhina, V.S. Solomatin, and A.I. Kholodnykh	Remote sensing of atmospheric gases by an IR laser spectrometer in the 3-mm range at a resolution of 0.1 cm ⁻¹	397(436)

E.V. Pikkel', M.S. Chukin	V.D. Samoilov, and	Effect of turbid medium scattering phase function anisotropy: on laser beam parameters	405(444)
V.L. Mironov, I.A. Sutorikhin	V.V. Morskii, and	An image processing system for smoke plume sounding	408(447)
Number 5			
V.P. Lukin and A.E. Melamud		Experimental study of regular refraction of laser radiation on short horizontal paths in the surface atmospheric layer	411(451)
A.A. Popov and O.V. Shefer		Estimate of the extinction of optical radiation by crystals lacking plane- parallel faces	416(456)
M. Begkhanov, V.N. Lebedinets	O. Kurbanmuradov, and G. Chopanov	Semi-empirical models of upper atmospheric aerosol composition	422(462)
S.D. Tvorogov, L.I. Nesmellova	O.B. Rodimova, and	2. Diffusion-sedimentation model	428(468)
O.K. Voitsekhovskaya, and N.N. Trifonova	N.V. Kuz'mina,	Spectral line mixing and line wing shape: A critical review	
A.A. Mitsel' and K.M. Firsov		The IR broad-band spectral characteristics of water vapor in the temperature range 300-2000°K	443(485)
A.V. Belinskii and A.S. Chirkin		On the accuracy of calculation of the mean values and variances of atmospheric absorption at 10.6 μm	451(494)
A.I. Zhiliba		Formation of non-classical optical fields during self-action	455(498)
V.V. Vorob'ev, E.N. Lotkova, and P.A. Dubovskii	V.A. Myakinin,	Shot noise reduction in the photodetection of radiation from a laser with intracavity generation of the second harmonic	463(507)
S.V. Mel'chenko, V.F. Tarasenko, and G.S. Evtushenko	A.N. Panchenko,	Sound excitation in air by a CO-laser beam	468(513)
Yu.V. Anishchenko, V.A. Radkov, and V.V. Sychev	V.Yu. Gal'perin,	Effect of optical breakdown on stimulated Raman scattering of XeCL- laser radiation in gases and vapors	472(518)
P.A. Bakut, I.V. Bayarkina, and A.D. Ryakhin		Ionization losses of $\lambda = 248$ nm UV- radiation in air	476(523)
I.P. Plotnikov, I.A. Rozhkov, and A.D. Ryakhin		Analysis of the quality of image formation in an adaptive system with compensation of random wavefront tilts on segments of the aperture	479(527)
O.I. Aldoshina, A.N. Karkhov, and V.A. Fabrikov	V.V. Bacherikov,	Restoration of the phase of the Fourier spectrum in the Knox-Thompson and triple-correlation methods	483(531)
S.D. Burakov, A.P. Godlevskii, and S.A. Ostanin		Transmission of signals from an isotropic source of optical radiation through a cloud layer	490 (538)
I.V. Znamenskii and A.A. Tikhomirov		Determination of the profile of distant objects with the help of a coherent autodyne lidar	498(547)
V.K. Pustovalov and I.A. Khorunzhii		Optimization and calculation of the parameters of a laser altimeter with incoherent reception	503(552)
		Self-action of a hollow beam of optical radiation propagating in a solid-particle aerosol	510(559)

Number 6

N.N. Bochkarev, N.P. Krasnenko, and Yu.M. Sorokin	Optoacoustic effects in aerosols	513(563)
G.O. Zadde and A.V. Podanov	Transfer equations for conservative optical characteristics of the atmosphere	528(579)
O.K. Voitsekhovskaya	Calculation of the vibrational-rotational structure of the spectrum of water for the temperature range 300-2500 K	533(585)
V.V. Vorob'ev	On the generation of sound in air by modulated 10.6 μm laser radiation	540(593)
F.Yu. Kanev and S.S. Chesnokov	Phase compensation of thermal distortions of light beams in the presence of high-frequency pulsations of the wind velocity	545(598)
P.A. Bakut, I.A. Rozhkov, and A.D. Ryakhin	Estimate of the potential resolution of passive methods of image formation through a turbulent atmosphere.	551(604)
B.D. Borisov	III. Infrared speckle interferometry Some characteristics of laboratory modeling in problems on the theory of vision	555(609)
V.F. Golovko and V.G. Tyuterev	Pade forms and molecular potential function. Representation based on the vibrational quantum numbers in diatomic molecules	562(616)
A.M. Ignatov and V.S. Suetin	Efficiency of the three-angle method for determining the temperature of the ocean surface from remote measurements of the IR radiation from space	568(622)
S.I. Kavkyanov and S.V. Strepetova	On taking into account the range of the solution when inverting an equation of the convolution type	574(628)
V.A. Smerkalov	Remote method for determining the path-averaged index of refraction of aerosol particles	580(635)
K.A. Kondrat'ev, M.V. Ovchinnikov, and V.I. Khvorost'yanov	Mesoscale model of the evolution of clouds with a mixed phase composition taking into account the interaction of optical, radiation, and meteorological processes	584(639)
K.A. Kondrat'ev, M.V. Ovchinnikov, and V.I. Khvorost'yanov	Modeling of the evolution of the optical, radiation and thermodynamic characteristics of the atmosphere during crystallization of clouds. I. Complete dispersal of clouds	591(647)
K.Ya. Kondrat'ev, M.V. Ovchinnikov, V.I. Khvorost'yanov	Modeling of the evolution of the optical, radiative, and thermodynamic characteristics of the atmosphere during cloud crystallization. II. Cloud formation after dispersal	598(655)
I.G. Polovtsev and G.V. Simonova	On the effect of residual interferometer aberration on the quality of interferometric measurements	605(662)
N.N. Bochkarev and P.A. Konyaev	Numerical solution of a nonlinear equation for a sound beam in the atmosphere	611(668)

B.D. Borisov, V.A. Krutikov,
V.M. Klimkin, A.A. Makarov,
G.V. Fedotova, and V.A. Chikurov

A TV multichannel photon counter

614(671)

Number 7

B.E. Grossmann, A.D. Bykov, V.V. Lazarev, L.N. Sinitsa, V.N. Stroinova and B.A. Tikhomirov	E.V. Browell, V.A. Kapitanov, Yu.N. Ponomarev, E.A. Korotchenko,	Investigation of H ₂ O absorption line shifts caused by air pressure in the visible	617(675)
V.V. Vergun, G.P. Kokhanenko, D.S. Mezhevoi	E.V. Genin, V.A. Krutikov, and A.V. Podanyov	On the specific temporal structure of radiation pulses in dense scattering media. Part I. Observations of the scattered radiation	631(691)
V.V. Antonovich, G.O. Zadde, and A.V. Podanyov		Estimating the intensity of aerosol precipitation from smoke plume optical thickness dynamics	638(698)
B.D. Belan and G.O. Zadde		Solar radiation extinction over the USSR: the anthropogenic aerosol effect	643(703)
A.D. Bykov, M.R. Kamalov, V.S. Makarov, and O.V. Naumenko	O.V. Zotov,	Analysis of the v ₂ +v ₃ absorption band of the molecule of H ₂ ¹⁷ O	647(706)
A.A. Pozdnyakov and V.I. Starikov		Theoretical determination of the spectroscopic parameters of the ammonia molecule	651(710)
V.P. Yakubov		Monostatic double sensing of eddy inhomogeneity fluxes with a moving reflector	658(716)
D.A. Bezuglov, E.N. Mishchenko, E.N. Myasnikov, S.V. Tolstousov, and V.L. Tyurikov	Z.P. Mastropas,	LiNbO ₃ crystal based electrooptic phase front corrector for adaptive optical systems: a performance study	664(723)
Yu.S. Balin, T.V. Vil'de, V.E. Zuev, N.P. Krasnenko, V.N. Molchanov, I.A. Razenkov, and M.G. Fursov		Lidar—acoustic studies of meteorological conditions and aerosol pollution over the city of Kemerovo	669(729)
M.L. Belov and V.M. Orlov		Pulsed sensing of the foam-covered sea surface through the atmosphere: the optical signal power	677(738)
A.V. Belokhvostikov, M.L. Belov, and V.M. Orlov		Effect of foam on the ocean-atmosphere brightness field	682(743)
L.S. Ivlev, O.V. Maksimenko, and A.V. Shashkin		On the short-period variations of the ozone content and of the intensity of solar radiation in the atmosphere near the ground	687(748)
S.L. Bondarenko, A.V. El'nikov, V.V. Zuev, and V.N. Marichev		Determination of the ozone concentration by lidar sounding at the wavelengths 308 and 532 nm	691(752)
O.I. Smoktii and A.V. Fabrikov		Concentration of the laser-radiation energy in the circle of irradiation with sharp edges	696(756)
M.F. Khairutdinov V.I. Khvorost'yanov	and	Mathematical modeling of an induced decrease in the orographic clouds optical thickness	701(761)

L.A. Gerasimova, M.V. Panchenko, S.A. Terpugova, and V.D. Teushchekov	A microcomputer-based information retrieval system for processing vertical profiles of aerosol characteristics	709(770)
R.A. Bakut, I.V. Boyarkina, and A.D. Ryakhin	On the resolution of an adaptive system with four-segment compensation of random wavefront tilts	713(774)
K.P. Burneika, V.N. Dobrygin, G.I. Ionushauskas, A.S. Piskarskas, and V.I. Smil'gyavichyus	Reflection of picosecond light pulses from a scattering medium	716(777)
V.L. Larin, B.Sh. Perkal'skis, A.G. Root, and G.N. Sotiriadi	Selective acoustic antenna	719(780)
Number 8		
V.T. Kalaida	Decision support system for solving problems in atmospheric optics	721(787)
A.A. Feoktistov and V.P. Popov	Approximate solution of the transfer equation: three-flux approximation	734(801)
V.V. Vergun, E.V. Genin, G.P. Kokhanenko, V.A. Krutikov, and D.S. Mezhevoi	Characteristics of the temporal structure of radiation in dense scattering media. II. Effect of geometric parameters of the experiment at small scattering angles	741(809)
S.E. Sarmin	Investigation of the effect of the optical characteristics and arrangement of clouds on the spatial and angular distribution of the light field	747 (815)
P.G. Lysenko, V.A. Smerkalov, L.A. Trifonov, and L.K. Ushakov	Investigation of the atmospheric aerosol by the method of inversion of the daytime sky brightness angular distribution function	753(821)
V.P. Ivanov	Modeling of the distribution of the near-IR atmospheric transmission	759(828)
M.Yu. Kataev, A.A. Mitsel', and S.K. Tarasova	Selection of the informative spectral sections for the solution of gas analysis problems with the help of an optoacoustic detector	763(832)
L.L. Losev and V.I. Soskov	Nonlinear photoionization of air in the spectral interval 355-200 nm	772(842)
I.P. Lukin	Effect of the spatial nonuniformity of the absorption coefficient and the index of refraction of a medium on the curvature of the wavefront of the sounding radiation	777(847)
A.P. Sukhorukov and E.N. Shumilov	Calculation of nonlinear aberration during thermal blooming of wave beams	781(851)
G.N. Dolya, I.V. Trushko, and S.N. Shostko	An algorithm for optical processing of nonmonochromatic signals in an adaptive system of autofocusing	789(860)
VI.V. Pokasov, V.V. Vorob'ev, A.S. Gurvich, A.S. Dyakov, and V.S. Pryanichnikov	Determination of laser beam structure by the acoustic method under kinetic air cooling conditions	792(864)
V.S. Antyufeev and A.L. Marshak	Restoration of plant canopy parameters from measurements of the spectral brightness coefficient	799(871)
A.A. Volkov, G.M. Grechko, A.S. Gurvich, V. Kan, S.K. Krikalev, A.I. Pakhomov, and S.A. Savchenko	Horizontal structure of stellar scintillations from observations from space through the Earth's atmosphere	806(879)

V.M. Dubyagin and N.A. Sheffer	Lidar detection of anomalous states of mesospheric sodium	812(885)
L.V. Kravets	Vertical distribution of the extinction coefficient of upper level clouds in the visible spectral range	818(891)
A.N. Kolerov	High-sensitivity intracavity laser spectrum analyzer operating in the wavelength region 770–820 nm	822(895)
Number 9		
O.G. Bokov	Intensities of Raman spectra and electrooptical parameters of molecules	827(899)
I.P. Lukin	Optical sounding beam parameters in aberrating refraction channels	840(915)
V.V. Vergun, E.V. Genin, G.P. Kokhanenko, V.A. Krutikov, and D.S. Mezhevoi	Specific features of the temporal structure of radiation in dense scattering media. Part III. The use of diffusion approximations to describe pulse shape	845(921)
A.A. Popov and O.V. Shefer	Interpretation of the anomalous backscattering effect	852(929)
V.G. Gusev	Spatial filtration of shear interferograms during holographic interferometry of a focused image	857(936)
Yu.E. Belikov	Luminescence around the MR-12 meteorological rockets in flight	866(946)
V.V. Antonovich, G.O. Zadde, and A.V. Podanev	Transfer equation for the optical depth applied to estimating the intensity of an aerosol pollution source	873(954)
A.E. Bulyshev, L.G. Velikhanova, and N.G. Preobrazhenskii	The Monte Carlo method in the emission tomography of the translucent atmosphere	877(959)
Yu.I. Terent'ev	Quantitative description of light diffraction at a slit (Young's representation)	883(965)
V.V. Nosov	Optical reconstruction of refraction-channel profiles	894(976)
V.P. Budak, and S.E. Sarmin	Solution of the radiation transfer equation by the method of spherical harmonics in the small-angle modification	898(981)
V.P. Kochanov	Shape of saturated optoacoustic absorption line for vibrational-rotational transitions of molecules	904(988)
P.A. Bakut, A.E. Belozerov, and A.D. Ryakhin	Estimate of the potential resolution of passive methods of image formation through a turbulent atmosphere.	910(995)
T.Z. Muldashev and V.E. Pavlov	IV. Adaptive telescope with a Hartmann sensor	916(1002)
V.P. Galileiskii and A.M. Morozov	On the effect of some factors on the determination of the optical scattering thickness from the sky brightness	919(1005)
Number 10		
I.V. Mishin	Color temperature and pseudoradiative properties of a Rayleigh atmosphere	925(1011)
Three-dimensional models of solar-radiation transfer in the atmosphere		

V.V. Veretennikov	Interpretation of the model of spectral extinction for coastal marine haze	939(1026)
V.G. Gusev	Spatial filtering of lateral shear interferograms in holographic interferometry of a focused image	947(1034)
V.N. Valentyuk	Statistical model of the transfer of an optical image through the earth's atmosphere	956(1045)
I.P. Lukin	Effect of fluctuations of aerosol particles concentration on the optical transfer function of the atmosphere	961(1051)
I.G. Shurygin, N.S. Belokrinitskii, V.M. Lagutin, and V.N. Sobolev	UV lidar for ozone sounding	965(1056)
Yu.P. Akulinichev and A.M. Golikov	Limiting form of the coherence function of a field in a layered nonuniform medium	969(1060)
S.I. Babkin and G.V. Grusha	Effect of atmospheric turbulence on the accuracy of the determination of humidity by the amplitude radioacoustic method	972(1064)
E.V. Lugin	Near resonance radiation attenuation in a weakly nonlinear gaseous dielectric	977(1070)
A.M. Samusenko	Upper atmosphere dayglow emission at $\lambda = 589, 330$, and 285 nm in the presence of NaCl vapor	984(1079)
M.S. Biryulina and V.V. Rozanov	Parameterization of the aerosol size-distribution functions for direct and inverse problems of atmospheric remote sensing	991(1087)
Yu.D. Kopytin, A.A. Chursin, G.A. Chursina, and S.A. Shishigin	Retrieving the microstructure of an ensemble of a spherical aerosol particles from nonlinear optical measurements	998(1096)
B.D. Borisov, V.M. Klimkin, V.A. Krutikov, A.A. Makarov, G.V. Fedotova, and V.A. Chikurov	High sensitivity gated TV system for image recording	1003(1102)
E.I. Kas'yanov and G.A. Titov	The mean value of albedo of system of broken cloud-underlying surface	1008(1108)
A.D. Bykov, O.V. Naumenko, and L.N. Sinitsa	A new resonance in the H ₂ O molecule	1014(1115)
Number 11		
V.V. Zuev and A.I. Petrova	Refined ATCF model for absorption line collisional broadening and shift taking into account finite impact parameter and effect of internal state upon relative velocity	1019(1123)
I.V. Mishin	Methods for atmospheric correction of the data of optical remote measurements	1034(1139)
V.A. Korshunov	Temporal and amplitude characteristics of optical pulsed radiation transmitted through a cloudy layer	1047(1154)
V.A. Korshunov and L.N. Pavlova	Dependence of the amplitude and temporal characteristics of pulsed optical radiation transmitted through a cloudy medium on the cloudiness parameters	1052(1159)
V.P. Ivanov	The development of a technique for estimating the atmospheric transmission	1058(1165)

I.P. Lukin and B.N. Chen	Effect of scattering by rainfall on the fluctuations of an optical image	1061(1169)
M. Begkhanov, O. Kurbanmuradov, and V.N. Lebedinets	Optical characteristics of the dust trails of meteors	1067(1176)
E.A. Korotchenko, V.V. Lazarev, Yu.N. Ponomarev, and B.A. Tikhomirov	Study of pressure broadening and shifts of the 103 band of water vapor caused by atomic and molecular gases	1076(1186)
S.F. Luk'yanenko, T.I. Novakovskaya, and I.N. Potapkin	Investigation of absorption by water vapor in the region 265...350 NM with the help of a spectrophotometer based on the KSVU-12M spectroscopic system	1080(1190)
M.S. Zubova and V.P. Kochanov	On the polarization dependence of the contour of a saturated molecular absorption line	1083(1193)
V.P. Aksenov	Analytical formula for phase reconstruction from light field intensity	1090(1200)
V.G. Gavrilenko and A.A. Semerikov	On the accuracy of the Doppler method in radioacoustic sounding of the atmosphere with short-wave radio waves	1094(1205)
N.D. Tsvetkova and V.A. Yushkov	Direct balloon measurements of the stratospheric aerosol	1098(1210)
S.I. Kavkyanov and S.V. Strepetova	Numerical differentiation of experimental data using the Fourier transform	1102(1215)
A.P. Chaikovskii	Method for investigating the structure of the stratospheric aerosol layer based on laser echo depolarization measurements	1107(1221)
D.V. Vlasov, D.Yu. Tsipenyuk, S.K. Vartapetov, V.S. Bukreev, and A.Z. Obidin	Investigation of the possibility of using an excimer KR-F laser in lidar experiments on detection of oil films on a water surface	1110(1224)
B.V. Kaul', O.A. Krasnov, and A.L. Kuznetsov	Correction of lidar signals for photomultiplier after pulsing noise	1113(1226)
V.P. Galileiskii, A.M. Morozov, and V.K. Oshlakov	Color temperature of the atmosphere and the aerosol optical thickness	1116(1229)

Number 12

V.P. Lukin	Multielement image correction system	1121(1235)
K.V. Shishakov and V.I. Shmal'gauzen	Polynomial expansion of atmospheric aberrations	1129(1244)
A.L. Vol'pov, Yu.A. Zimin, and V.N. Lopatkin	Statistical model of the signal in the synthesis of images of small objects by the method of active interferometry	1133(1249)
I.Yu. Polyakova and A.P. Sukhorukov	Compensation of far-field thermal defocusing of laser radiation	1140(1258)
V.L. Dmitriev, A.A. Mishukova, V.P. Lukin, and V.V. Sychev	Correction of the thermal self-action of laser radiation on atmospheric paths with the help of a "slow" phase conjugate adaptive system	1149(1269)
F.Yu. Kanev, O.A. Mitrofanov, V.V. Popov, and S.S. Chesnokov	Experimental and theoretical investigation of the effectiveness of adaptive focusing of radiation in a nonlinear medium	1152(1273)
P.A. Konyaev, V.P. Lukin, and V.B. Fortes	Phase correction of nonlinear distortions of a laser beam on a vertical atmospheric path	1157(1279)

V.P. Kandidov, O.A. Mitrofanov, and V.V. Popov	D.P. Krindach,	Adaptive system for phase compensation of nonlinear distortions produced by thermal self-action of a light beam	1163(1286)
V.P. Lukin and M.I. Charnotskii		Optimal phase correction of focused beams in a randomly nonuniform medium	1170(1294)
S.V. Butsev		Synthesis of the operation algorithm of an adaptive optical system	1175(1300)
V.A. Dmitriev, V.P. Lukin, and V.V. Sychev	V.B. Kasperskii,	Split-beam model in the investigation of adaptive correction of the thermal self-action of laser radiation on extended inhomogeneous paths in the atmosphere	1179(1304)
V.P. Lukin and B.V. Fortes		Phase distortions of an optical beam due to its self-action under conditions of gravitational convection	1182(1307)
O.I. Vasil'ev, S.S. Lebedev, and L.P. Semenov	Yu.N. Kolomiets,	Modeling PC-correction of laser beams in the atmosphere	1186(1312)
P.A. Konyaev, G.Ya. Patrushev, and S.Yu. Tabakaev	V.P. Lukin,	An investigation of intensity fluctuations of reflected radiation in the turbulent atmosphere by the Monte Carlo method	1194(1321)
D.A. Bezuglov and E.N. Mishchenko		Transient processes in a flexible adaptive mirror for adaptive optical systems with variable focal length	1198(1325)
A.V. Kurenkov, O.I. Shanin	V.I. Kislov,	Spatial filtration in problems on wavefront measurements by the Hartmann method	1200(1328)
		Contents of volume 3, 1990	1203(1331)
		Author's index, volume 3, 1990	1220(1343)