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Contents

xix	<i>Authors</i>
xxv	<i>Conference Committee</i>
xxix	<i>Introduction</i>

Part One

MOLECULAR SPECTROSCOPY AND ATMOSPHERIC RADIATIVE PROCESSES

10466 02	Non-equilibrium radiation in the infrared bands of the CO₂ and CO molecules in the planetary atmospheres (in the application to Mars) (Invited Paper) [10466-295]
10466 03	Retrieval of daytime [O₃] altitude profile from measurements of 1.27 μm O₂ emission in the mesosphere: a comparison of methods [10466-33]
10466 04	The temperature dependences of the integrated intensities of the absorption bands of H₂O, H₂S, SO₂, and NO₂ [10466-78]
10466 05	The absorption of the hot bands in the spectra of H₂S, SO₂, and NO₂ at temperatures of 300 – 1000 K [10466-79]
10466 06	Wavenumber calibration of a multichannel Raman spectrometer [10466-101]
10466 07	Raman spectra of n-pentane and isopentane in a methane environment [10466-102]
10466 08	Simulation of the mean intensity of reflected solar radiation in broken clouds: spherical model of atmosphere [10466-111]
10466 09	RKR potentials of HCl isotopologues in the ground electronic state [10466-119]
10466 0A	Calculations of air-, carbon dioxide and self-broadening coefficients of H₂S lines [10466-139]
10466 0B	Calculation of NO₂ line contour parameters induced by nitrogen and carbon dioxide [10466-177]
10466 0C	Simulation of atmospheric radiative transfer using different ozone absorption cross-sections in the UV spectral region [10466-214]
10466 0D	Concentration of water complexes in description of the nucleation process by small sets of chemical kinetics equations [10466-233]
10466 0E	Systematization of published research graphics characterizing weakly bound molecular complexes with carbon dioxide [10466-286]

- 10466 OF **Broadening and shift coefficients for H₂O – H₂ system in 4000 – 9000 cm⁻¹ infrared spectral region** [10466-288]
- 10466 OG **"Dunham-type" coefficients for the ground state of ¹⁴N¹⁶O molecule: global fitting of the experimental energy levels** [10466-225]

OPTICAL RADIATION PROPAGATION IN THE ATMOSPHERE AND OCEAN

- 10466 OH **Optical communication on scattered laser radiation (Invited Paper)** [10466-24]
- 10466 OI **Microwave absorption ambiguity of pine needles at negative temperatures** [10466-4]
- 10466 OJ **Measurements of astroclimate in the dome space of Big Telescope Alt-Azimuth** [10466-9]
- 10466 OK **Measurements of the astroclimate over the territory of special astrophysical observatory of RAS** [10466-10]
- 10466 OL **Air motions inside dome room of Big Telescope Alt-azimuth at Special Astrophysical Observatory RAS: numerical solutions of Navier–Stokes equations** [10466-11]
- 10466 OM **Mean intensity of the fundamental Bessel-Gaussian beam in turbulent atmosphere** [10466-13]
- 10466 ON **Works on a set of data measuring turbulence in different seasons of the year** [10466-16]
- 10466 OO **Experimental studies of the correlation of wave-front aberrations of a point coherent source and an extended luminous object** [10466-17]
- 10466 OP **Statistical analysis of wavefront fluctuations from measurements of a wave-front sensor** [10466-18]
- 10466 OQ **Coherence degree of the fundamental Bessel-Gaussian beam in turbulent atmosphere** [10466-22]
- 10466 OR **Mean intensity of the vortex Bessel-Gaussian beam in turbulent atmosphere** [10466-26]
- 10466 OS **Coherence of the vortex Bessel-Gaussian beam in turbulent atmosphere** [10466-27]
- 10466 OT **Dynamics of the refractive properties of the atmosphere at the Big solar vacuum telescope site: new calculating method** [10466-29]
- 10466 OU **On the spectral composition of atmospheric turbulent optical distortions from observations on solar telescopes** [10466-30]
- 10466 OV **Statistical analysis of turbulent distortions of optical radiation in closed loop of the adaptive optics system** [10466-39]
- 10466 OW **Dynamic properties of the adaptive optics system depending on the temporary transformations of mirror control voltages** [10466-40]

- 10466 0X **Program–hardware complex for optical beams formation with modeled tilt angels**
[10466-49]
- 10466 0Y **Thermal distortions of multichannel laser radiation** [10466-50]
- 10466 0Z **Applying local binary patterns in image clustering problems** [10466-53]
- 10466 10 **Effect of radiation polarization on reconstruction of the earth's surface reflection coefficient from satellite data in the visible wavelength range** [10466-54]
- 10466 11 **Influence of apertures of receiving – transmitting system on DWFT spatial field processing in diagnostics of inhomogeneous plasma** [10466-56]
- 10466 12 **Functional scheme of the construction process of a multi-site system for lightning activity monitoring of tropical cyclones** [10466-58]
- 10466 13 **Influence of absorption lines of atmospheric gases on the pulsed radiation spectrum of short duration** [10466-60]
- 10466 14 **Optical wave distortion at perturbations of air density near aircrafts with subsonic velocities**
[10466-61]
- 10466 15 **Laser beam distortion propagation through a shock wave arising in a supersonic flow past ogival-shaped body, in a homogeneous medium** [10466-63]
- 10466 16 **Wave propagation in a multiscale random inhomogeneous medium** [10466-67]
- 10466 17 **Energy density fluctuations of pulsed Laguerre-Gaussian beam superposition in a turbulent atmosphere** [10466-69]
- 10466 18 **Statistical simulation of information transfer through non-line-of-sight atmospheric optical communication channels** [10466-72]
- 10466 19 **The distribution of probability density of fluctuations the scattered radiation focused laser beam in the near-ground atmosphere in rain, drizzle, and fog** [10466-80]
- 10466 1A **Spatial and spectral characteristics of the distribution post-filamentation zone of femtosecond laser pulses** [10466-93]
- 10466 1B **Debye potentials for heterogeneous media** [10466-96]
- 10466 1C **Diurnal periods of VLF radiation** [10466-98]
- 10466 1D **Ionospheric waveguide and magnetically oriented irregularities** [10466-107]
- 10466 1E **Experimental study of flame characteristics during the combustion of certain types of liquid hydrocarbon fuels** [10466-115]
- 10466 1F **Experimental and numerical study of temperature fields and flows in flame during the diffusion combustion of certain liquid fuels** [10466-124]

- 10466 1G **Backscattering enhancement factor dependence of a Laguerre-Gaussian laser beam propagating on the location path in the atmosphere on optical turbulence intensity** [10466-125]
- 10466 1H **Performance analysis of a parallel Monte Carlo code for simulating solar radiative transfer in cloudy atmospheres using CUDA-enabled NVIDIA GPU** [10466-133]
- 10466 1I **Experimental and theoretical studies of near-ground acoustic radiation propagation in the atmosphere** [10466-138]
- 10466 1J **Field tests of a passive optical meter of the structure characteristic of refractive index** [10466-149]
- 10466 1K **Monte Carlo simulation of halos, glories, coronas, and multiple scattering of light** [10466-156]
- 10466 1L **Monte Carlo simulation of specific features of radiation regime in water layer caused by clouds and roughness of the water surface** [10466-157]
- 10466 1M **Use of atmospheric backscattering for adaptive formation of the initial wave front of a laser beam by the method of aperture sensing** [10466-173]
- 10466 1N **Anomalous broadening and shift of emission lines in filaments** [10466-179]
- 10466 1O **Investigations of an acoustic field, generated by a supersonic flooded jet** [10466-190]
- 10466 1P **Use of statistical study methods for the analysis of the results of the imitation modeling of radiation transfer** [10466-204]
- 10466 1Q **Bottlenecks in the remote sensing of the $^{13}\text{CO}_2/^{12}\text{CO}_2$ isotopic ratio from GOSAT measurements** [10466-209]
- 10466 1R **Investigation of the threshold of the filamentation and generation of supercontinuum depending on the concentration of chlorophyll a photosynthesizing pigment in sea water** [10466-212]
- 10466 1S **Spectral features of Raman scattering and fluorescence sea water induced by femtosecond laser pulses** [10466-216]
- 10466 1T **Diffusion of rays at oblique propagation in a randomly inhomogeneous medium with regular refraction** [10466-231]
- 10466 1U **Development of the technique for determination of plasma temperatures subject to Faraday effect for Irkutsk incoherent scatter radar** [10466-234]
- 10466 1V **Acousto-optical imaging spectrometer for unmanned aerial vehicles** [10466-242]
- 10466 1W **Application of Vorob'ev's asymptotic solution to retrieval of the structural characteristics C_n^2 from BSA-lidar data** [10466-248]
- 10466 1X **BSA-lidar operation in the weak turbulent conditions** [10466-249]

- 10466 1Y **Remote sensing problem with multiple scattering effect** [10466-257]
- 10466 1Z **Sensitivity of the satellite thermal infrared hyperspectrometer to variations of atmospheric characteristics** [10466-258]
- 10466 20 **Assessment of spatial coherence of a vortex axisymmetric Airy beam propagating in the turbulent atmosphere** [10466-265]
- 10466 21 **Light lens response in nanoheterogeneous liquid** [10466-270]
- 10466 22 **Determination of the bottom surface profile** [10466-271]
- 10466 23 **Hardware correction of laser wave beam atmospheric distortions for energy transfer system at 1500 meters horizontal path** [10466-276]
- 10466 24 **Scattering properties of a radially heterogeneous sphere made of metal nanoparticles and the dielectric matrix** [10466-287]
- 10466 25 **Quasi-optical 2D system for non-contact non-destructive testing of defects in natural and artificial crystals** [10466-293]
- 10466 27 **Fast recognition of marine particles in underwater digital holography** [10466-294]
- 10466 28 **Development principals of three-cascaded terahertz laser with generation of difference frequency radiation in the nonlinear optical crystal ZnGeP₂ for terahertz holography** [10466-297]
- 10466 29 **Radio thermal sounding of natural environments** [10466-120]
- 10466 2A **Some elements of investigation the transformation of surface and pseudosurface modes in an open asymmetric thin-film structure with a synthetic medium** [10466-282]

OPTICAL INVESTIGATION OF ATMOSPHERE AND OCEAN

- 10466 2B **Effect of the orientation degree of crystalline ice particles in cirrus on the total flow of solar radiation in the photosynthetically active range (Invited Paper)** [10466-211]
- 10466 2C **Problem of light scattering by atmospheric ice crystals (Invited Paper)** [10466-235]
- 10466 2D **Estimations of pollution emissions by the Moscow megapolis basing on in-situ measurements and optical remote sensing (Invited Paper)** [10466-87]
- 10466 2E **Estimate of latitudinal and longitudinal boundaries of aerosol regions in the East Atlantic** [10466-19]
- 10466 2F **Determination of particles concentration in Black Sea waters from spectral beam attenuation coefficient** [10466-20]
- 10466 2G **Peculiarities of spatial-temporal variability of the aerosol optical depth of the atmosphere over Kara and Barents Seas in 2016** [10466-28]

- 10466 2H **Variability of chlorophyll-a concentration in the north-western part of the Black Sea based on satellite data analysis and modeling** [10466-31]
- 10466 2I **Year-to-year variability of the aerosol and black carbon concentrations in cloudless troposphere of Western Siberia in 2000-2016** [10466-34]
- 10466 2J **Fast monitoring of dissolved organic and suspended matter using data of beam attenuation coefficient in Black Sea** [10466-35]
- 10466 2K **Results of 5-year SPM photometer measurements of spectral atmospheric transparency at Antarctic Mirny observatory** [10466-36]

Part Two

- 10466 2L **Annual dynamics of the black carbon size distribution in the near-ground submicron aerosol in western Siberia** [10466-37]
- 10466 2M **Composition of suspended matter in the tropical waters of Atlantic Ocean according to the light scattering** [10466-44]
- 10466 2N **Transmission of radiant energy by gas-aerosol medium containing methane** [10466-48]
- 10466 2O **Particle size distribution function of photoelectric counter and closed volume aureole photometer (seasonal variations and inter-annual differences)** [10466-51]
- 10466 2P **Microphysical changes in the aerosol component of the gas-disperse mixture of near-ground air under the exposure to ultraviolet radiation (DRT-1000 lamp)** [10466-57]
- 10466 2Q **Determination of the wind velocity vector by a micropulse coherent Doppler wind lidar with a duo-beam method** [10466-59]
- 10466 2R **Experimental research of different factors influencing on stability of laser induced fluorescence spectra of plants** [10466-62]
- 10466 2S **Dynamics of the standard deviations of three wind velocity components from the data of acoustic sounding** [10466-70]
- 10466 2T **Control of operating parameters of laser ceilometers with the application of fiber optic delay line imitation** [10466-73]
- 10466 2U **Numerical simulation of impurity transport in Lake Baikal during the summer period** [10466-74]
- 10466 2V **Lidar measurements of the turbulence energy dissipation rate in the boundary layer of atmosphere in presence of low level jet streams and atmospheric internal waves** [10466-82]
- 10466 2W **Accuracy of estimation of the turbulence energy dissipation rate in the atmospheric boundary layer from measurements of the radial wind velocity by micropulse coherent Doppler lidars** [10466-83]

- 10466 2X **Measurement of the cross wind velocity by the Doppler lidar and the correlation passive optical meter** [10466-84]
- 10466 2Y **First experiment on retrieval of tropospheric NO₂ over polluted areas with 2.4-km spatial resolution basing on satellite spectral measurements** [10466-85]
- 10466 2Z **Study of different operational modes of the IAP 2-port-DOAS instrument for atmospheric trace gases investigation during CINDI-2 campaign basing on residual noise analysis** [10466-86]
- 10466 30 **Hydrooptical laser sensing of fish schools** [10466-94]
- 10466 31 **Impact of spectral bands number on classification accuracy of oil pollutions using laser induced fluorescence** [10466-95]
- 10466 32 **Robust statistical methods in sodar studies of the ABL** [10466-105]
- 10466 33 **Spatiotemporal structure function of intensity in the optical image of a topographic object in a turbulent atmosphere** [10466-108]
- 10466 34 **Peculiarities of the suspended matter distribution received by the optical measurements in the photic layer of the north part of the Black Sea in the summer period of 2016** [10466-109]
- 10466 35 **Lidar investigation of wake vortices generated by a landing aircraft** [10466-112]
- 10466 36 **Toxic trace elements in solid airborne particles and ecological risk assessment in the vicinity of local boiler house plants** [10466-114]
- 10466 37 **Power laws for the backscattering matrices in the case of lidar sensing of cirrus clouds** [10466-116]
- 10466 38 **Using actinometric data for identification of cumulus clouds** [10466-117]
- 10466 39 **Design of an optical system for coupling a wideband light source with an acousto-optical tunable filter** [10466-118]
- 10466 3A **Effect of the preferred orientation of non-spherical ice crystals in high-level clouds on the depolarization ratio of lidar signals** [10466-123]
- 10466 3B **Grassland fire spread simulation using NDVI data** [10466-127]
- 10466 3C **Optical monitoring of film pollution on sea surface** [10466-140]
- 10466 3D **Polarimeter based on video matrix** [10466-141]
- 10466 3E **Optical properties of aerosol during condensation growth: numerical study** [10466-142]
- 10466 3F **Analysis of polarization characteristics of double scattering lidar return from droplet and crystal clouds** [10466-143]
- 10466 3G **Methods and device for in situ total suspended matter (TSM) monitoring in natural waters' environment** [10466-151]

- 10466 3H **Diffuse attenuation coefficient for downwelling irradiance at 490 nm and its spectral characteristics in the Black Sea upper layer: modeling, *in situ* measurements and ocean color data** [10466-165]
- 10466 3I **Long-term variability of aerosol and Black Carbon concentrations in the atmospheric surface layer as results of 20-year measurements at the IAO Aerosol Station** [10466-166]
- 10466 3J **Comparison of the results of inversion of the spectral aerosol extinction coefficients and angular dependences of aerosol scattering** [10466-167]
- 10466 3K **Impact of optically active layers in the Black Sea on the quality of retrieved ocean color products: modeling and satellite observations** [10466-169]
- 10466 3L **Reconstruction of microstructure parameters of the coarsely dispersed aerosol from spectral measurements of the aerosol optical thickness during a one-year observation period from their regression relations using a finite sample** [10466-170]
- 10466 3M **Influence of atmospheric correction errors on retrieving bio-optic upper sea layer characteristics: model calculations** [10466-171]
- 10466 3N **Influence of wildfires in the boreal forests of Eastern Siberia on atmospheric aerosol parameters** [10466-180]
- 10466 3O **“LOSA-S” – basic lidar of the CSF “ATMOSPHERE” IAO SB RAS for tropospheric studies** [10466-186]
- 10466 3P **Seasonal variability of the aerosol absorption and scattering properties** [10466-195]
- 10466 3Q **Retrieval of the vertical distribution of aerosol microphysical characteristics from lidar measurements in Tomsk** [10466-196]
- 10466 3R **Methodology of ground aerosol sources determination based on AERONET and HYSPLIT models data results** [10466-198]
- 10466 3S **Methods and device for *in situ* dissolved organic matter (DOM) monitoring in natural waters' environment** [10466-203]
- 10466 3T **Potential sources of precipitation in Lake Baikal basin** [10466-205]
- 10466 3U **The fields of mean concentration in potential sources of ammonium sulphate, ammonium nitrate, and natural silicates for the west of Moscow region** [10466-206]
- 10466 3V **Probability of transport of air parcels from the arid lands in the Southern Russia to Moscow region** [10466-207]
- 10466 3W **Potential sources of Southern Siberia aerosols by data of AERONET site in Tomsk, Russia** [10466-208]
- 10466 3X **Bioluminescence field of the Black Sea as indicator of Dinophyta aggregation, its seasonal and interannual dynamics** [10466-210]

- 10466 3Y **Statistical estimation of the potential possibilities for panoramic hydro-optic laser sensing**
[10466-213]
- 10466 3Z **Lidar monitoring of stratospheric aerosol and ozone at the Siberian Lidar station** [10466-302]
- 10466 40 **LOSA-M3: multi-wave polarization scanning lidar for research of the troposphere and cirrus clouds** [10466-215]
- 10466 41 **Analysis of 2D distribution of the frequency spectra of the flame model fire whirl**
[10466-217]
- 10466 42 **Crosswind estimations by using correlation and spectral video processing algorithms**
[10466-219]
- 10466 43 **Accuracy improvement of determining temperature and concentrations of gases by the approximation polynomials method on the example of high-temperature CO₂** [10466-223]
- 10466 44 **Investigation of emission lines excitation efficiency in femtosecond plasma generated on the surface of chemical elements water solution** [10466-226]
- 10466 45 **New infrared spectrograph for the investigation of the mesopause region** [10466-229]
- 10466 46 **Main types of optical beams giving predominant contributions to the light backscatter for the irregular hexagonal columns** [10466-236]
- 10466 47 **Physical model of optical inhomogeneities of water** [10466-237]
- 10466 48 **Recording optical flashes in the night atmosphere from CCD photometer** [10466-239]
- 10466 49 **Development of the algorithm for light scattering by concave ice crystals of cirrus clouds**
[10466-240]
- 10466 4A **Recovery of wind field characteristics by lidar data** [10466-244]
- 10466 4B **Annual variability in light absorption by particles and colored dissolved organic matter in the Crimean coastal waters (the Black Sea)** [10466-245]
- 10466 4C **Light absorption coefficients by phytoplankton pigments, suspended particles, and colored dissolved organic matter in the Crimea coastal water (the Black sea) in June 2016**
[10466-246]
- 10466 4D **Stereoscopic tip for a video endoscope: problems in design** [10466-247]
- 10466 4E **Peculiarities of mercury accumulation and concentration in conifers of Tomsk region**
[10466-255]
- 10466 4F **Thermal mechanism of the radiation self-action in transparent nanoheterogeneous medium** [10466-259]
- 10466 4G **The joint methane profiles retrieval approach from GOSAT TIR and SWIR spectra** [10466-263]
- 10466 4H **Beam deflection method in the light induced pseudo-prism in nanosuspension** [10466-273]

- 10466 4I **A study of thermal diffusion in a two-component liquid by z-scan method** [10466-279]
- 10466 4J **Holographic method of nanoparticles diagnostics in liquid** [10466-280]
- 10466 4K **Sedimentation of particles by the light pressure in nanosuspension** [10466-281]
- 10466 4L **Concept of a broadband near- and mid-IR lidar** [10466-296]
- 10466 4M **Effect of particles size distribution of droplet cloud on polarization characteristics of double scattering lidar return** [10466-266]
- 10466 4N **Development of optical analyzer for determining the dimentions and concentration of aerosol particles** [10466-274]

ATMOSPHERIC PHYSICS AND CLIMATE

- 10466 4O **Climatology of lightning activity in northern Asia in 2009-2016 (Invited Paper)** [10466-178]
- 10466 4P **Simulation of gas outlets in the Selenga shallow waters of Lake Baikal (Invited Paper)**
[10466-146]
- 10466 4Q **A link between cold events in Moscow, Russia, in winter and daily anomalies of sea ice concentration in the Barents Sea** [10466-2]
- 10466 4R **Measurements of dielectric constant of supercooled water in the temperature range from -20°C to -120°C at the frequencies of 7-11GHz** [10466-5]
- 10466 4S **Verification of the effects of Schumann frequency range electromagnetic fields on the human cardiovascular system** [10466-7]
- 10466 4T **Features of influence of spatially inhomogeneous geomagnetic field on a humans heart rhythm variability** [10466-8]
- 10466 4U **Vilyuysk meteor explosion: ionospheric and geomagnetic effects in the high-latitude lower ionosphere** [10466-12]
- 10466 4V **Cloud manifestations of atmospheric gravity waves over the water area of the Kuril Islands during the propagation of powerful transoceanic tsunamis** [10466-14]
- 10466 4W **Numerical modeling of atmospheric turbulent Ekman flow** [10466-15]
- 10466 4X **Statistical modeling of temperature, humidity, and wind fields in the atmospheric boundary layer over the Siberian region** [10466-23]
- 10466 4Y **Numerical method for predictive estimate of classification efficiency for various cloud type images based on texture information from MODIS data** [10466-32]
- 10466 4Z **Diurnal dynamics of the CO₂ concentration in water of the coastal zone of lake Baikal in the ice period (testing of the DIEL – CO₂ method for assessment of lake metabolic rate)**
[10466-38]

- 10466 50 **Natural factor effect on atmospheric electric field formation in Kamchatka** [10466-41]
- 10466 51 **The influence of orographic waves and quasi-biennial oscillations on vertical ozone flux in the model of general atmospheric circulation** [10466-45]
- 10466 52 **Vertical profile of fluorescent characteristics in Baikal water in the spring period of 2010-2016** [10466-46]
- 10466 53 **Patterns and stochastic models of the annual precipitation variability in Siberia** [10466-52]
- 10466 54 **Structure of atmospheric circulation variability in the North Atlantic/European Sector related to AMO in summer** [10466-64]

Part Three

- 10466 55 **Snow water equivalent in Western Siberia as simulated by land-surface model, satellite data and from ERA-Interim reanalysis** [10466-65]
- 10466 56 **Sensitivity of the Arctic Ocean gas hydrate to climate changes in the period of 1948-2015** [10466-68]
- 10466 57 **Influence of the vertical mixing parameterization on the modeling results of the Arctic Ocean hydrology** [10466-81]
- 10466 58 **Spatial distribution of the thunderstorm activity characteristics for the territory of Western Siberia** [10466-90]
- 10466 59 **Comparison of the relative transparency of the atmosphere measured by attenuation of Cherenkov light** [10466-91]
- 10466 5A **Cosmic rays energy determination by radio emission registration method at frequency 30-35 MHz** [10466-92]
- 10466 5B **Development of a monitoring network for lightning strokes accompanying the eruptions of the Northern group of volcanoes on Kamchatka peninsula** [10466-97]
- 10466 5C **Humidity change with height in cyclones under external impacts** [10466-100]
- 10466 5D **Development and implementation of the software for visualization and analysis of data geophysical loggers** [10466-121]
- 10466 5E **Evaluation of the complete evaporation time for atmospheric aerosol drops with regard to concentration and temperature jumps at their surfaces and unsteady evaporation process** [10466-122]
- 10466 5F **Methods to estimate lightning activity using WWLLN and RS data** [10466-126]
- 10466 5G **Development of software for geodynamic processes monitoring system** [10466-129]
- 10466 5H **Variability of conditions for water phase transitions in the atmosphere of the Black Sea region** [10466-132]

- 10466 5I **Evaluation of supercooled water content in the atmosphere using real-time radiometry methods** [10466-130]
- 10466 5J **Synchronous analysis of statistical characteristics of natural climatic processes** [10466-131]
- 10466 5K **Processing of meteorological data with ultrasonic thermoanemometers** [10466-134]
- 10466 5L **Study of phase clustering method for analyzing large volumes of meteorological observation data** [10466-135]
- 10466 5M **Joint research of extremely low frequency electromagnetic background at Baygazan (Russian Altay) and Kolarovo (Tomsk region)** [10466-136]
- 10466 5N **Polarization characteristics of Schumann resonances in Tomsk** [10466-137]
- 10466 5O **Field of the arctic control-correction station of the GLONASS when received at heights up to 10 km in different seasons of the year** [10466-144]
- 10466 5P **Dynamics of electrical characteristics of the surface atmosphere during the passage of cumulonimbus clouds in the cold season** [10466-145]
- 10466 5Q **Variational methods for predicting climate-environmental processes with assimilation of observational data** [10466-148]
- 10466 5R **Vertical ozone flux in the near-surface layer of a background region of Western Siberia in 2016** [10466-150]
- 10466 5S **Simulation of spread and transformation of emissions from Norilsk industrial zone with the WRF-CHEM model: comparison with experimental data of airborne sensing** [10466-152]
- 10466 5T **Weekly cycles of formaldehyde and nitrogen dioxide in the atmosphere over Northern Eurasia: anthropogenic or natural?** [10466-153]
- 10466 5U **Manifestations of minor and final stratospheric warmings in the MLT and F2-region** [10466-154]
- 10466 5V **Peculiarities of the atmospheric blocking events over the Siberia and Russian Far East region during summertime** [10466-158]
- 10466 5W **The determination of ionosphere parameters on the base of backscatter sounding data** [10466-159]
- 10466 5X **Ray paths for radio waves traveling through cosine ionospheric layer** [10466-160]
- 10466 5Y **Calibration methods for absolute measurements at the Irkutsk incoherent scatter radar** [10466-161]
- 10466 5Z **Dynamics of surface temperatures at the Crimean peninsula territory** [10466-162]
- 10466 60 **Spatio-temporal variations of vegetation indicators in Eastern Siberia under global warming** [10466-163]

- 10466 61 **Complex observations at the geophysical observatory "Klyuchi" during a strong geomagnetic storm in June 2015** [10466-164]
- 10466 62 **Macrocirculation processes responsible for precipitation in Altai** [10466-168]
- 10466 63 **Spatio-temporal variations in characteristics of the IR emissions of atomic oxygen and of carbon dioxide in the upper atmosphere** [10466-174]
- 10466 64 **Methods and devices used in the wildfire localization for the protection of forest ecosystems** [10466-175]
- 10466 65 **Dynamics of the EEG of human brain in the gradient magnetic fields of geological faults in different geographical and climatic zones** [10466-176]
- 10466 66 **Solar x-ray flares effects in amplitude and phase variations of VLF-signals of radio stations registered in Yakutsk during 2009-2016** [10466-181]
- 10466 67 **The research into the hydrology of Siberia based on the of information-computing system** [10466-182]
- 10466 68 **Variations of intensity atmospheric electric field during a thunderstorm in Yakutsk** [10466-183]
- 10466 69 **Seasonal dynamics of VLF signals amplitude Novosibirsk radio station and mesopause region temperature in 2009-2015** [10466-184]
- 10466 6A **A multiscale video system for studying an optical phenomena during active experiments in the upper atmosphere** [10466-185]
- 10466 6B **Experimental study of global electromagnetic resonances of the Earth-ionosphere cavity in high latitudes (Novaya Zemlya Island and settlement Tiksi)** [10466-188]
- 10466 6C **Results of radio measurement in the White, Barents, and Kara Seas in the summer of 2016** [10466-189]
- 10466 6D **Deterministic and stochastic methods of calculation of polarization characteristics of radiation in natural environment** [10466-191]
- 10466 6E **The beginning of the space age: information and mathematical aspect. To the 60th anniversary of the launch of the first sputnik** [10466-192]
- 10466 6F **Potential sources of the air masses leading to warm and cold anomalies in Moscow in summer** [10466-193]
- 10466 6G **On the division of contribution of the atmosphere and ocean in the radiation of the Earth for the tasks of remote sensing and climate** [10466-194]
- 10466 6H **Dependence of the surface ozone concentration on the air temperature and conditions of atmospheric circulation in Western Siberia in the warm season (May-September)** [10466-197]

- 10466 6I **A combined model for analysis and projection of the regional air temperature dynamics** [10466-199]
- 10466 6J **Simulation of winter mesoclimates in Krasnoyarsk urban agglomeration** [10466-200]
- 10466 6K **Impacts of climate change on energy consumption of Russian cities in the winter period** [10466-201]
- 10466 6L **The characteristics of the near ground and integrated atmospheric water's annual and internal variations in Europe** [10466-202]
- 10466 6M **Maintaining data of route observations of emission plumes from Norilsk mining and metallurgical plant** [10466-218]
- 10466 6N **Determination of humidity of the troposphere by GNSS signals** [10466-221]
- 10466 6O **Numerical simulation of idealized front motion in neutral and stratified atmosphere with a hyperbolic system of equations** [10466-224]
- 10466 6P **Spatio-temporal variability of atmospheric precipitation in West Siberia over last decades using observational data** [10466-227]
- 10466 6Q **Urban climate and energy demand interaction in Northern Eurasia** [10466-228]
- 10466 6R **The global climate change effect on the Altai region's climate in the first half of XXI century** [10466-230]
- 10466 6S **Features of the structure of surface air temperature field in the northern hemisphere** [10466-241]
- 10466 6T **Comparison of the isotopic composition of precipitation and air for three Arctic stations with the results of the ECHAM5-wiso modeling** [10466-243]
- 10466 6U **Calculation of photophoretic motion characteristics of fractal-like soot aggregates using the specialized aerosol solver** [10466-251]
- 10466 6V **Radiophysical methods of diagnostics the Earth's ionosphere and the underlying Earth's surface by remote sensing in the short-wave range of radio waves** [10466-252]
- 10466 6W **Development of mathematical model and numerical method for analysis of air mass movement in street canyon** [10466-253]
- 10466 6X **Calculation of energetic characteristics of C-14 emitted from Beloyarsk nuclear power plant plume with fast neutron reactor** [10466-256]
- 10466 6Y **Regarding retrievals of methane in the atmosphere from IASI/Metop spectra and their comparison with ground-based FTIR measurements data** [10466-260]
- 10466 6Z **The limitation distance for remote detection of radioactive atmospheric emission from Siberian chemical combine** [10466-262]

- 10466 70 **Geomagnetic activity signature in seasonal variations of mesopause temperature over Yakutia** [10466-264]
- 10466 71 **Application of the using terawatt lidar system of the IAO SB RAS in the case of the remote sensing** [10466-269]
- 10466 72 **Dynamics of actual aggregation of petroleum products in snow cover** [10466-147]
- 10466 73 **The concentration of PM₁₀ in the atmospheric surface layer of Krasnoyarsk in the period of unfavorable meteorological conditions** [10466-272]
- 10466 74 **Variational data assimilation of airborne sensing profiles to the transport and transformation model of atmospheric chemistry** [10466-283]
- 10466 75 **Systematization of climate data in the virtual research environment on the basis of ontology approach** [10466-285]
- 10466 76 **Interpretation of the lidar observations of volcanic aerosol over Tomsk and Vladivostok in the summer 2011 by trajectory method** [10466-298]
- 10466 77 **On the role of the method of measuring the background signal in the lidar measurements of the upper atmosphere** [10466-299]
- 10466 78 **Dynamics of the ozone layer in the southern hemisphere based on satellite data** [10466-301]

INVESTIGATION OF THE UPPER ATMOSPHERE WITH THE USE OF GLOBAL NAVIGATION SATELLITE SYSTEMS (GNSS)

- 10466 79 **Multi-year changes of mesoscale variations in atmospheric parameters from the data of GNSS satellites (Invited Paper)** [10466-42]
- 10466 7A **Dynamics of spectra ionospheric disturbances above Moscow by GPS- data during summer 2010** [10466-6]
- 10466 7B **Studying aspect scattering peculiarities of GNSS phase fluctuations caused by anisotropic irregularities** [10466-25]
- 10466 7C **Possibility of correcting ionospheric model, using data from single-frequency receivers of global navigation satellite systems** [10466-43]
- 10466 7D **The comparative analysis of the intensity of the total electron content of the ionosphere variations above Yoshkar-Ola and Irkutsk cities** [10466-71]
- 10466 7E **Determining method of electronic concentration total profile using oblique and transionospheric sounding data** [10466-75]
- 10466 7F **The plotting algorithm of coherence band maps of transionospheric radio channels** [10466-76]

- 10466 7G **The impact of solar flares analysis on the intensity variations of the total electron content of the middle latitudes ionosphere in the European Region** [10466-77]
- 10466 7H **The dynamics of ionosphere disturbance level during 94-04 and its response to a global leap of geophysical parameters at 1997** [10466-250]
- 10466 7I **Determining the absolute total electron content from the single-frequency GPS/GLONASS data** [10466-261]
- 10466 7J **Estimation of sea level variations with GPS/GLONASS-reflectometry technique** [10466-267]
- 10466 7K **Determination of the ionospheric response parameters to the engine operation of spaceship "Progress" according to GNSS data** [10466-268]
- 10466 7L **Ionospheric variations during typhoons of autumn 2016** [10466-277]
- 10466 7M **Ionosphere and magnetosphere disturbance impact on operation slips of Global navigation satellite systems at mid- and high-latitudes** [10466-278]
- 10466 7N **Variations of the electrical component's relation to the magnetic of the electromagnetic signals from lightning discharges passing on the earthquake epicenter** [10466-284]

Authors

Numbers in the index correspond to the last two digits of the seven-digit citation identifier (CID) article numbering system used in Proceedings of SPIE. The first five digits reflect the volume number. Base 36 numbering is employed for the last two digits and indicates the order of articles within the volume. Numbers start with 00, 01, 02, 03, 04, 05, 06, 07, 08, 09, 0A, 0B...0Z, followed by 10-1Z, 20-2Z, etc.

Afanasiev, A. L., 1J, 2X, 42
Agafontsev, M. V., 1E, 1F
Akbashev, R. R., 5B
Aksenov, Valeri P., 20
Aleksenko, M. A., 1P
Alekshev, D. V., 34
Alexandrov, G. G., 6K
Alipova, K. A., 75
Alsatkin, S. S., 5Y
Ammosov, P. P., 45, 69, 70
Ammosova, A. M., 45, 69, 70
Anciz, Elena N., 61
Andreeva, E. S., 7J
Antipov, O. L., 0Y
Antokhin, Pavel N., 5R, 5S, 5V, 74
Antokhina, Olga Yu., 5R, 5S, 5V, 6H, 6M
Antoshkin, L. V., 0X
Anufriev, I. S., 1E
Apeksimov, D. V., 1A, 1B, 24
Argunov, V. V., 7N
Artamonov, Yu. V., 34
Astafurov, Vladimir G., 4V, 4Y
Avdeev, F. A., 0U
Ayurov, D. B., 6B, 6C
Babanin, E. A., 23
Babiy, M. Yu., 44
Babushkin, P. A., 71
Badin, A. V., 25
Balin, Yu. S., 3O, 3Q, 40
Balybina, A. S., 53
Banakh, Viktor A., 13, 14, 17, 1J, 2Q, 2V, 2W, 2X,
33, 35, 42
Baranov, N. A., 4A
Baranovskiy, Nikolay V., 3B, 5F
Barlyaeva, T. V., 62
Bart, A. A., 75
Bashkuev, Yu. B., 5O, 6B, 6C, 6N
Batshev, Vladislav, 39, 4D
Bazhenov, O. E., 3Z
Begunov, D. A., 72
Begunova, L. A., 72
Belan, Boris D., 5R, 5S, 6H, 6M
Belikova, Marina Yu., 5F
Belinskaia, Anastasiia Yu., 61
Belov, Michael L., 2R
Belov, S. Yu., 6V
Belov, Vladimir V., 0H, 10, 18, 1I
Belova, I. N., 6K, 6V
Berbeneva, N. A., 7J
Berdyugin, A. I., 25
Beresnev, S. A., 6U
Bezler, Ilya V., 7B
Biryukova, Yu. S., 44
Blank, A. V., 23
Blizorukov, Aleksander, 6L
Bogushevich, A. Ya., 5K
Bordonskiy, G. S., 4R
Borkov, Yu. G., 0G
Borodin, A. S., 4S, 4T
Borovoi, Anatoli G., 2C, 37, 46, 49
Borovski, Alexander N., 2Y, 2Z
Borovsky, A. V., 44
Borzilov, A. G., 0X
Botygin, I. A., 5D, 5G, 5J, 5K, 5L
Botygina, N. N., 0O, 0P
Bruchkovski, I., 2Z
Bryukhanov, I. D., 2B, 3A, 4N
Bryukhanova, V. V., 2B, 4M, 4N
Bukin, O. A., 1R, 1S
Bullo, Olga A., 2R
Burkatovskaya, Yuliya B., 1I
Burnashov, A. V., 71
Burov, D. V., 1R, 1S
Buyanova, D. G., 6B
Bychkov, Vasily V., 77
Bykov, Vladimir Yu., 5I
Chekhlenok, A. A., 1R, 1S
Chentsov, A. V., 0C
Chepyzhenko, A. A., 3G, 3S
Chepyzhenko, A. I., 3G, 3S
Cheredko, Natalia N., 6S
Cheremisin, Alexander A., 76
Cherenkova, E. A., 54
Cherepanov, Oleg S., 32
Cherneva, N. V., 12, 1C, 50, 5B
Cherniakov, Sergei M., 4U
Chernov, A. A., 7F
Chernov, D. G., 2I, 2L
Chesnokova, T. Yu., 0C
Chigrin, P. G., 4K
Chkhetiani, O. G., 3V
Churilova, T. Ya., 3H, 4B, 4C
Danilkin, Evgeniy A., 6W
Danova, T. E., 5H, 5Z
Davydova, A. Y., 27
Deichuli, V. M., 0F
Dembelov, M. G., 5O, 6N
Demchenko, P. F., 6Q

Denisova, N. Yu., 6T
 Dergunov, A. V., 78
 Devjatova, Elena V., 5V
 Dokukin, S. A., 6K
 Dolgii, S. I., 3Z
 Domysheva, V. M., 4Z, 52
 Donchenko, V. A., 1B, 24
 Doroshkevich, Anton A., 3F, 4M
 Dorozhkin, K. V., 25
 Druzhin, G. I., 1C, 5B
 Dudaryonok, Anna S., 0B
 Dudorov, Vadim V., 20
 Dyomin, V. V., 27, 28
 Edemskiy, Ilya, 7H
 Efimova, T., 4B, 4C
 Egorov, O. V., 04, 05, 43
 Eirikh, A. N., 62
 Elansky, N., 2D
 Elizarov, Alexey I., 0Z
 Elokhov, A., 2Z
 Emaleev, O. N., 0O, 0P
 Emelyanov, N. M., 43
 Eselevich, M. V., 0U
 Evstigneev, V. P., 3X
 Evsyutkin, Timofey V., 4Y
 Faleychik, Larisa M., 6J
 Falits, Andrey V., 2Q, 2V, 2X, 33, 35
 Fateyev, V. N., 64
 Fazliev, A. Z., 0E, 75
 Fedirko, A. V., 34
 Fedotov, Yury V., 2R, 31
 Firsov, K. M., 0C
 Firstov, P. P., 50, 5B
 Gaponov, M., 1V
 Gauss, Martin, 29
 Gavrilov, Nikolai M., 51, 79
 Gavrilyeva, G. A., 45, 69, 70
 Gendrina, I. Yu., 1P
 Gerasimova, L. O., 13, 17
 Ginzburg, A. S., 6Q
 Glagolev, Vladimir A., 3B
 Glebova, Alena V., 5F
 Gochakov, A. V., 5S
 Golik, S. S., 1N, 1R, 1S, 44
 Golubeva, Elena N., 56, 57
 Gorbatenko, Valentina P., 58
 Gordeev, E. V., 1M, 2Q, 2X
 Gordeev, V. F., 5D, 5G
 Gordov, E. P., 75
 Gorodnichev, Victor A., 2R
 Gribanov, Konstantin G., 1Q, 4G, 6T, 6Y
 Gribenyukov, A. I., 28
 Gridnev, Yu. V., 3Z
 Grigoriev, P. E., 65
 Grishina, Anastasia, 74
 Grudovich, Lubov E., 6W
 Gryazin, V. I., 6U
 Gurov, K. I., 3K
 Gurulev, A. A., 0I
 Gvozdarev, A. Yu., 5M
 Iakshina, Dina F., 56, 57
 Iglakova, A. N., 1A, 71
 Ignatov, A. V., 53
 Ilin, Gennadii N., 5I
 Ilyin, A. A., 1N, 44
 Imasu, Ryoichi, 1Q, 4G, 6Y
 Ishin, A. B., 7K
 Ivanov, D. V., 7D, 7E, 7F, 7G
 Ivanov, V. A., 7E, 7F
 Ivanov, V. B., 7I
 Ivanov, V. G., 4Z
 Ivanov, V. I., 4F, 4H, 4I, 4J, 4K
 Ivanov, V., 7D, 7G
 Ivanova, G. D., 21, 4F, 4H, 4I, 4J, 4K
 Kabanov, A. M., 1A
 Kabanov, Dmitry M., 2E, 2G, 2K
 Kabanov, M. M., 5G
 Kablukova, Evgeniya G., 1K, 1L
 Kachurin, Yury, 4D
 Kalinskaya, D. V., 3M, 3R
 Kan, V. A., 22
 Kanev, F. Yu., 0Y
 Kapegesheva, O. F., 2S
 Kapranov, V. V., 23
 Kapustin, S. N., 5G
 Karakhanyan, A. A., 5C
 Karanin, Andrey V., 5F
 Karanina, Svetlana Yu., 5F
 Karimov, R. R., 66
 Karlysheva, A. V., 7J
 Kartashova, Elena S., 2B, 38
 Kashirskii, D. E., 04, 05, 2N, 43
 Kashkin, V. B., 78
 Kasilova, E. V., 6Q
 Kosymov, D. P., 64
 Katagiri, Shuichiro, 37
 Kelyuev, S., 5M
 Khamaturova, M. Yu., 6Y
 Khaptanov, V. B., 6B, 6C
 Kharyutkina, E. V., 6P
 Kharchenko, O. V., 4L
 Khasanov, A. S., 5E
 Khe, V. K., 4H, 4K
 Khokhlov, Demid, 39
 Khomich, V. Yu., 63
 Khutorov, Vladislav, 6L
 Khutorova, Olga, 6L
 Kim, A. A., 2T
 Kim, A. G., 5W
 Kireeva, Anastassiya I., 2A
 Kiselev, A. V., 0T
 Kisiltsin, A. A., 7E, 7F
 Klemasheva, M. G., 3O, 4O
 Klimentenko, V. V., 6I
 Klimeshina, Tatyana E., 0D
 Klochkov, D. V., 2T
 Knizhin, S. I., 11
 Knurenko, S. P., 59, 5A
 Kobzev, Alexey A., 5P
 Kogan, Rifa M., 3B

Kokhanenko, G. P., 3O, 3Q, 4O
 Kolesnik, S. A., 5M, 5N
 Kolker, A. B., 5S
 Kolmakov, A. A., 5M, 5N
 Kolobov, D. Yu., 0U
 Kolotkov, Gennady A., 6X, 6Z
 Koltovskoi, I. I., 45, 69, 70
 Konetskaya, Elena V., 7B
 Konkin, N. A., 7F
 Konoshonkin, Alexander V., 2C, 37, 46, 49
 Konstantinov, Oleg, 3C, 3D
 Konstantinova, Daria A., 58
 Konyaev, M. A., 2T
 Konyaev, P. A., 0N, 0O, 0P
 Kop'yev, E. P., 1E
 Kopulov, E. A., 0N, 0U
 Korchemkina, E. N., 2F, 2J
 Korolkov, V. A., 5K
 Korsakov, A. A., 66, 69
 Kotovich, G. V., 5W
 Kovadlo, P. G., 0N, 0T, 0U
 Koval, Andrey V., 5I
 Kovalev, Aleksander A., 6I
 Kozlov, V. S., 2I, 2L, 3I, 3P
 Kozlov, Vladimir I., 4O, 66, 68, 69
 Krasnenko, Nikolay P., 1I, 2S, 38
 Krivenko, O., 4B, 4C
 Krutikov, V. A., 5L
 Krylov, S. D., 4R
 Kuchinskaya, O. I., 1A
 Kudin, D. V., 5M
 Kudinov, O. B., 3R
 Kurbatov, G. A., 7J
 Kurbatskaya, L., 4W
 Kurbatskiy, A., 4W
 Kurepina, N. Yu., 6Z
 Kushnarev, D. S., 5Y
 Kuskov, V. V., 15, 1M
 Kustova, Natalia V., 2C, 37, 46, 49
 Kutuzov, I. Y., 28
 Kuzin, Victor I., 67
 Kuzmin, M. K., 5E
 Kuznetsova, A. N., 7Z
 Kuznetsova, O. V., 7Z
 Lagutin, Anatoly A., 1Z, 6R
 Lapteva, Natalya A., 67
 Laryunin, O. A., 5X
 Latushkin, A. A., 2F, 2J, 34, 4C
 Lavrentiev, N. A., 0E
 Lavrentieva, Nina N., 0A, 0B
 Lavrinov, V. V., 0V, 0W, 0X
 Lavrinova, L. N., 0V, 0W, 0X
 Lebedev, V. P., 5Y
 Lee, M. E., 2F
 Lemesko, E. M., 2H
 Leschinsky, Dmitry V., 6W
 Lisenko, Andrey A., 3Y
 Lisitsyn, Alexander P., 2G
 Loboda, E. L., 1E, 1F
 Loginov, S. V., 6P
 Lomakina, N. Ya., 4X
 Lomukhin, Yuriy, 29
 Loskutov, V. V., 2N
 Loukhnev, A. V., 6N
 Loukhneva, O. F., 6N
 Lubo-Lesnichenko, Konstantin E., 2G
 Lukin, Igor P., 0M, 0Q, 0R, 0S
 Lukin, Vladimir P., 0J, 0K, 0L, 0N, 0O, 0P, 0T, 0U, 0Y
 Lyapina, E. E., 4E
 Lyu, E. R., 22
 Machikhin, Alexander, 1V, 39, 4D
 Makarenkov, Aleksandr A., 2Y
 Makeev, A. P., 3Z
 Makenova, N. A., 0Y
 Maksakova, S. V., 6D, 6G
 Makushev, Konstantin M., 6R
 Malakhova, Valentina V., 56
 Malygina, N. S., 6Z
 Malyshev, S. Yu., 5D
 Mankovskaya, E. V., 2J, 2M
 Mankovsky, V. I., 2M
 Manuilova, Rada O., 03, 79
 Marakasov, D. A., 1J, 1O, 2X, 41, 42
 Marichev, Valery N., 76
 Martynov, O. V., 34
 Matrosov, I. I., 06, 07
 Matvienko, G. G., 1A
 Matvienko, O. V., 1F
 Mayor, A. Yu., 1N, 1R, 1S
 Medvedev, A. V., 1U, 5Y
 Medvedeva, Irina V., 5U, 63
 Mihaylenko, A. S., 2T
 Mikhailenko, S. N., 09
 Mikhalev, A. V., 48
 Mikushina, O. V., 6I
 Mochalov, V. A., 12, 5B
 Mochalova, A. V., 12, 5B
 Moiseeva, N., 4B, 4C
 Mokhov, I. I., 3T, 5T
 Molodykh, S. I., 5C
 Mordvin, Egor Yu., 1Z, 6R
 Mordvinov, Vladimir I., 5V
 Myagotin, A. V., 21, 4J
 Mylnikova, A. A., 7I
 Nagorskiy, Petr M., 5P
 Nasonov, S. V., 2B, 3O, 4O
 Nasrtdinov, I. M., 08
 Nazarenko, M. O., 7J
 Nee, E. V., 4M, 4N
 Nesterov, I. A., 7J
 Nevzorov, A. A., 3Z
 Nevzorov, A. V., 3Z
 Ni, E. V., 2B
 Nikiforova, M. P., 5Z
 Nikolashkin, S. V., 4U, 6A
 Nosov, Eugene V., 0J, 0K, 0L
 Nosov, Victor V., 0J, 0K, 0L, 0U
 Novikov, Pavel V., 76
 Ogibalov, Vladimir P., 02
 Okamoto, Hajime, 37

Okladnikov, I. G., 75
 Orlov, A. O., 4R
 Oshlakov, V. K., 1A, 71
 Osipova, Nina A., 36
 Osipova, O. P., 53
 Ovseychook, O. O., 21
 Padokhin, A. M., 7J
 Panamarev, N. S., 1B, 24
 Panamaryova, A. N., 1B, 24
 Panchenko, Mikhail V., 2G, 2I, 2L, 2O, 3I, 3J, 4Z, 52
 Papina, T. S., 62
 Pavlinskii, Alexey V., 5I
 Pavlov, Andrey N., 3C, 3D, 3E, 76
 Penenko, Alexey V., 5S, 74
 Penenko, Vladimir V., 5Q, 6J
 Penin, Sergei T., 6X
 Penner, I. E., 3O, 3Q, 40
 Penzin, M. S., 5W
 Perevalova, N. P., 7M
 Perezhogin, Andrey S., 77
 Perminov, V. I., 63
 Permyakov, M. S., 12
 Pestunov, D. A., 4Z, 52
 Petrov, A. V., 1A
 Petrov, D. V., 06, 07
 Petrov, G. A., 4A
 Petrov, I. S., 59, 5A
 Petrova, T. M., 0F
 Pkhalagov, Yu. A., 3J, 3P
 Pobachenko, S. V., 65
 Podlesny, S. V., 48
 Pogoreltsev, Alexander I., 51
 Pogutsa, Cheslav E., 20
 Polkin, Vas. V., 2O, 3J
 Polkin, Viktor V., 2E, 2O, 3J
 Polovtsev, I. G., 27, 28
 Polyakov, Denis V., 58
 Ponomarchuk, S. N., 5W
 Ponomarev, N., 2D
 Popova, V. V., 55
 Popovskaya, G. I., 52
 Postlyakov, Oleg V., 2D, 2Y, 2Z
 Pozhar, Vitold, 1V, 39
 Poznakharev, E. S., 18
 Prigarin, Sergei M., 1K, 1L
 Prikhodko, L. I., 1T
 Privezentsev, A. I., 75
 Prokhorov, I. V., 22
 Proschenko, D. Yu., 1N, 1R, 1S, 44
 Pustovalov, Konstantin N., 5P
 Pyanova, Elza A., 6J
 Radionov, Vladimir F., 2G, 2K
 Rakhimov, R. F., 2P
 Rakov, Aleksandr S., 1I
 Rakov, Denis S., 1I
 Raputa, Vladimir F., 6M
 Ratovsky, Konstantin, 5U
 Razenkov, I. A., 1M, 1W, 1X
 Razmolov, A. A., 0C
 Reshetnikov, A. A., 6A
 Reyno, V. V., 1E, 1F
 Rodimova, Olga B., 0D, 0E
 Rokotyan, N. V., 1Q, 6Y
 Romanovskii, O. A., 3Z, 4L
 Rostov, A. P., 1J
 Rozhenko, Sergei A., 1K
 Rubleva, T. V., 78
 Rudenok, Igor P., 2A
 Russkova, Tatiana, 1H
 Ryabchinskaya, N. A., 62
 Ryabova, M. I., 7D, 7E, 7F, 7G
 Ryabova, N. V., 7D, 7E, 7F, 7G
 Rytchkov, D. S., 1G
 Sadovnikov, S. A., 4L
 Sakerin, Sergey M., 2E, 2G, 2K
 Sakirko, M. V., 4Z, 52
 Samoilova, S. V., 3O, 3Q, 40
 Samokhvalov, I. V., 1B, 24, 2B, 3A
 Sankov, V. A., 6N
 Sannikov, D. V., 5B
 Sarmisokov, Zohir T., 1Z
 Sato, Kaori, 37
 Savenkova, Elena N., 51
 Savkin, Denis E., 6H
 Sazanovich, V. M., 1O, 41
 Sazhin, Victor I., 7C
 Sedinkin, D. O., 06, 07
 Selin, A. A., 0N
 Semakov, Nikolay N., 61
 Semenov, A. I., 63
 Semenov, V. A., 4Q, 54, 55, 6F
 Seredkin, Ilya N., 77
 Serikova, I. M., 3X
 Setov, A. G., 48, 5Y
 Shakhova, Tatyana S., 36
 Shamanaev, Vitalii S., 30, 3Y
 Shamanaeva, Liudmila G., 1I, 2S, 32
 Shamrin, A. M., 4Z, 52
 Shefer, O. V., 2N
 Shelekhov, Alexander P., 5I
 Shelekhova, Evgeniya A., 5I
 Sherstnev, V. S., 5D, 5L
 Sherstneva, A. I., 5D, 5J, 5L
 Sherstobitov, M. V., 41
 Shesternin, A. N., 1M, 1O
 Shevchenko, G. V., 4V
 Shevchenko, Vladimir P., 2G
 Shevchenko, Ye. A., 0A
 Shevtsov, Boris M., 5B, 77
 Shikhovtsev, A. Yu., 0N, 0T, 0U
 Shimaraev, M. N., 52
 Shiryayev, I. F., 4A
 Shishko, Victor A., 2C, 46
 Shitov, A. V., 4T
 Shmargunov, V. P., 2I, 2L, 2P, 3I, 3P
 Shmirko, Konstantin A., 1N, 3C, 3D, 3E
 Shukurov, K. A., 3T, 3U, 3V, 3W, 4Q, 6F
 Shukurova, L. M., 3U, 3W
 Shurygin, A., 1V

Shybanov, E. B., 47
 Sidorova, Olga R., 2G
 Simakhin, Valerii A., 32
 Simonenkov, Denis V., 5S, 6M
 Sitnov, S. A., 5T
 Sivokon', V. P., 1D
 Sivtseva, V. I., 45, 70
 Skorokhod, Nikolai N., 0Z
 Skorokhodov, A. V., 4V
 Slabakova, V. K., 3H
 Smalikho, Igor N., 2Q, 2V, 2W, 35
 Sokolov, M. V., 65
 Sokratov, V. S., 55
 Solodov, A. A., 0F
 Solodov, A. M., 0F
 Solovyev, Vladimir S., 3N, 60
 Starikov, V. I., 0F
 Strelkov, S. A., 6D, 6G
 Suhareva, N. A., 23
 Sukharev, A. A., 14, 15, 2Q, 2X
 Sulakshina, O. N., 0G
 Sushchenko, A. A., 1Y, 22
 Sushkevich, T. A., 6D, 6E, 6G
 Suslin, V. V., 3H, 3K, 3M, 3X, 4B
 Suslyayev, V. I., 25
 Sviridenkov, M. A., 3J
 Talovskaya, Anna V., 36
 Tarabukina, Lena D., 4O, 68
 Tarasenkov, M. V., 10, 18
 Tartakovsky, V. A., 5G, 5J
 Tashlykov, V. P., 1U, 5Y
 Telminov, A. E., 5K, 5P
 Teptin, G. M., 6L
 Tereshchenko, Valentina A., 4U
 Tereshin, A. G., 6I
 Terpugova, Svetlana A., 2G
 Timofeev, Dmitriy N., 2C, 49
 Tinin, Mikhail V., 11, 16, 7B
 Titkov, N. N., 7M
 Titkova, T. B., 55
 Titov, A. G., 75
 Titova, L. A., 52
 Tkachev, A. D., 11
 Tkachev, I. D., 48
 Tokarev, Yu. N., 3X
 Tolmachev, Gennadii N., 6H
 Tomshin, Oleg A., 3N
 Torgaev, Andrey V., 0J, 0K, 0L
 Toropov, Anatoly A., 68
 Trifonova, A. V., 1B, 24
 Tsvetova, E. A., 4P
 Tsvyk, R. Sh., 1O, 41
 Tsydenov, Bair O., 2U
 Tsyganova, M. V., 2H
 Tsyrenzhapov, S. V., 0I
 Tugaenko, V. Yu., 23
 Turkov, D. V., 55
 Tuzhilkin, D. A., 4S, 4T
 Uchaikin, E. O., 5M
 Unuchkov, Vladimir E., 7C
 Usoltseva, M. V., 52
 Uvarov, V. N., 5B
 Uzhegov, V. N., 3J, 3P
 Varentsov, M. I., 6K
 Varlamova, Eugenia V., 60
 Vasilieva, I. V., 65
 Vasilyev, R. V., 48
 Velichko, T. I., 09
 Veretekhin, I. D., 0Y
 Veretennikov, V. V., 3L
 Verevkin, Y., 2D
 Vigasin, A. A., 0E
 Vigovskiy, V. Y., 25
 Vlasova, O. K., 1T
 Voeykov, S. V., 7D, 7K, 7M
 Voitsekhovskaya, O. K., 04, 05, 2N, 43
 Volkov, Nikolai V., 6R
 Volkov, Yury V., 5L, 6S
 Volobuev, L., 2D
 Vornovskikh, P. A., 1Y
 Voronin, B. A., 0A
 Voronina, S. S., 0A
 Voronina, Yu. V., 0C
 Vostretsov, N. A., 19
 Werner, M., 6T
 Yakovlev, S. V., 4L
 Yanchukovskiy, Valery L., 61
 Yankovsky, Valentine A., 03
 Yaroslavtseva, Tatyana V., 6M
 Yasyukevich, A. S., 7L, 7M
 Yasyukevich, Yu. V., 7D, 7I, 7L, 7M
 Yausheva, E. P., 2L, 2P, 3I, 3P
 Yazikov, Egor G., 36
 Yudin, M. S., 6O
 Yudin, N. N., 28
 Zadvornyykh, Ilya V., 4G
 Zakharov, Victor I., 7A, 7M
 Zakharov, Vyacheslav I., 1Q, 4G, 6Y
 Zakovryashin, Andrei V., 1K
 Zaloznaya, I. V., 33
 Zaripov, A. R., 06, 07
 Zavoruev, V. V., 52, 73
 Zavorueva, E. N., 73
 Zemlianskaia, E., 4B
 Zemlyanov, Al. A., 1A, 1B, 24
 Zenkova, Polina N., 2G
 Zheleznyak, I. I., 0I
 Zhivetiev, I. V., 7M
 Zhivotenyuk, I. V., 2B
 Zhuravleva, T. B., 08
 Zima, V. P., 64
 Zimovaya, A. V., 10
 Zubareva, Anna M., 3B
 Zubko, Evgenij S., 3D, 3E
 Zuev, A., 7D, 7G
 Zuev, Sergey V., 2B, 38
 Zuev, Vladimir V., 5I

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- N. A. Zolotukhina**, Institute of Solar-Terrestrial Physics
(Russian Federation)

Conference E: **Investigation of the upper atmosphere with the use of Global
Navigation Satellite Systems (GNSS)** Conference dedicated to the 20th anniversary of
the local GPS/GLONASS-atmosphere research

- V. V. Dem'yanov**, Irkutsk State Transport University
(Russian Federation)
- N. P. Perevalova**, Institute of Solar-Terrestrial Physics
(Russian Federation)
- Yu. V. Yasukevich**, Institute of Solar-Terrestrial Physics
(Russian Federation)

Introduction

In accordance with the schedule of meeting and conferences approved by the Presidium of the Siberian Branch of the Russian Academy of Sciences (SB RAS) for 2017, the V.E. Zuev Institute of Atmospheric Optics SB RAS and Institute of Solar-Terrestrial Physics SB RAS organized the Twenty third International Symposium titled "Atmospheric and Ocean Optics: Atmospheric Physics" in Irkutsk, Russian Federation, 3 - 7 July 2017.

We wish to thank our sponsors for their contribution to the success of the symposium: Federal Agency for Scientific Organizations, Siberian Branch of the Russian Academy of Sciences and the Russian Foundation for Basic Research. English and Russian were the working languages of the symposium. All poster presentations and oral presentations were made in English and Russian (using synchronous translation via personal audio-equipment).

We conducted five conferences titled:

- A. Molecular Spectroscopy and Atmospheric Radiative Processes
- B. Optical Radiation Propagation in the Atmosphere and Ocean
- C. Optical Investigation of Atmosphere and Ocean
- D. Atmospheric Physics and Climate
- E. Investigation of the upper atmosphere with the use of global navigation satellite systems (GNSS)

The main topics of the Twenty third International Symposium on Atmospheric and Ocean Optics/Atmospheric Physics included:

- Molecular spectroscopy of atmospheric gases
- Absorption of radiation in atmosphere and ocean
- Radiative regime and climate problems
- Models and data bases for atmospheric optics and physics
- Wave propagation in random inhomogeneous media
- Adaptive optics
- Nonlinear effects at radiation propagation in atmosphere
- Multiple scattering in optical remote sensing
- Image transfer and processing
- Optical and microphysical properties of atmospheric aerosol and suspension in water media
- Transport and transformation of aerosol and gas components in the atmosphere
- Laser and acoustic sounding of atmosphere and ocean
- Diagnostics of state and functioning of plants bio systems
- Structure and dynamics of the lower and middle atmosphere
- Dynamics of the atmosphere and climate of the Asian region

- Physical processes and phenomena in the atmosphere
- Optic techniques for probing the atmosphere
- Structure and dynamics of the upper atmosphere on GNSS observations
- Climatological studies of the upper atmosphere using GNSS
- The relationship processes in the lithosphere, atmosphere, ionosphere, magnetosphere and the Sun according to the GNSS
- Development of methods for monitoring the upper atmosphere with the use of GNSS
- The use of GNSS for the development of empirical and physical models
- Influence of the atmosphere on the quality of GNSS operation

History: A symposium on Atmospheric and Ocean Optics has been held annually since 1994 by the Institute of Atmospheric Optics SB RAS. From 1971 to 2017 the IAO SB RAS organized more than 60 conferences on different scientific topics. The current symposium is the only one in Russia where fundamental problems of propagation in inhomogeneous media and the scattering and absorption radiation are considered. Very few conferences in the world have such a spectrum of interest. It is very attractive that the official languages of symposium are Russian and English.

In the field listed here, the Siberian scientific schools are leaders in our country and well known in the world. This fact can be attributed to the interest in the symposium from the scientists of Russian Federation and other countries of the former.

Present: The Twenty third International Symposium "Atmospheric and Ocean Optics: Atmospheric Physics" was successfully held in Irkutsk, Russia, 3-7 July 2017. The program of the symposium included 8 invited and plenary papers, 183 oral presentations, and more than 220 poster presentations during five poster sessions.

Gennadii G. Matvienko
Oleg A. Romanovskii