

The impact of climate change on tourism in Russia. Klueva M. V.
Proceedings of MGO. 2022. V. 605. P. 5–24.

The article discusses the consequences of climate change for the tourism business in Russia. It is obvious that the impact of climate change on tourism will manifest itself in different ways, depending on both the region and the type of tourism activity. Many of these impacts will manifest themselves indirectly as a result of increased stress on ecological systems. The article focuses on the negative consequences, since today they should become the main issues of development and management of tourism in the country, especially in relation to natural tourism, which is the most vulnerable.

Keywords: climate change, beach tourism, winter tourism, Arctic tourism, ecological tourism

Fig. 2. Ref. 39.

Improvement accounting technology for microclimate information in the calculation of specialized characteristics of snow cover on the example of the mountain relief of the North Caucasus. Faselko D.V., Pigoltsina G.B.
Proceedings of MGO. 2022. V. 605. P. 25–40.

A methodology for detailed quantitative assessment of the spatial variability of the snow cover characteristics in the conditions of difficult terrain and insufficient meteorological information is proposed.

The results of calculations of changes in the snow cover depth, water equivalent of snow cover and snow load depending on the terrain altitude and the orientation of the slopes in the mountainous relief of the North Caucasus are presented.

Keywords: snow cover, mountainous relief, microclimatic variability.

Fig. 6. Tab. 3. Ref. 24.

Analysis of agrometeorological conditions of the growing season and the yield of spring wheat in the Akmola region of the Republic of Kazakhstan.

K. Akshalov, S. Baisholanov, D. Aueskhanov, O. Baimukanova. Proceedings of MGO. 2022. V.605. P. 41–57.

The agrometeorological conditions that have developed in the period from 1991 to 2021 in the Akmola region Republic of Kazakhstan are analyzed. By natural zones, the sums of precipitation, the sum of effective air temperatures, indicators of moisture supply and aridity of the growing season were analyzed, and the dependence of the yield of spring wheat on them was established.

Key words: precipitation, air temperature, moisture availability, aridity, growing season, spring wheat

Fig. 4. Tab. 5. Ref. 12.

Influence of electric field generators operating in the upper layers of the atmosphere on the electricity of the surface layer. Morozov V. N.

Proceedings of MGO. 2022. V. 605. P. 58–91.

A review of works on the influence of electric generators is considered. acting at ionospheric and magnetospheric heights on electric fields in the surface layer. Based on the solution of theoretical problems, estimates of these fields are given, both for the stationary and non-stationary cases of the code transmitted down to the earth's surface depends on the frequency. Most effectively, ionospheric electric fields penetrate into the surface layer in the case of low frequencies (quasi-stationary case). At the same time, high-frequency fields penetrate into the surface layer with an efficiency of 1% of the value of quasi-stationary fields.

Keywords: Ionospheric and magnetospheric generators, electrical conductivity of the ionosphere and magnetosphere, frequency of oscillations of the ionosphere potential.

Fig 1. Tab. 3. Ref. 20.

International Pyrheliometer Comparisons and World radiometric standard. Proceedings of MGO. Rodionov A.A., Yakovlev V.S. 2022. V. 605. P. 92–108.

The article presents the description of modern methods and principles of organization of the International Pyrheliometer Comparisons (IPC), as well as the description of the World Radiometric Reference. A brief historical outline of the IPC is given, and the IPC-XIII held in 2021 is described. Also, the article contains short description of the International Pyrgeometer Comparisons (IPgC), the International Filter Radiometer Comparisons (FRC) and the participation of the Voeikov MGO in the IPC.

Keywords: pyrheliometry, international pyrheliometer comparisons, IPC, world radiometric reference, WRR, world standard group, WSG, pyrgeometer, filter radiometer, IPgC, FRC.

Fig. 2. Tab. 2. Ref. 18.

Assessment of the modern state of methods for measurement and calculation of evaporation value from the snow cover surface. Kalyuzhny I. L., Skorospekhova T. V. Proceedings of MGO. 2022. V. 605. P. 109–137.

Analysis of publications devoted to evaporation from the snow cover surface over the even land of the watersheds is given in the paper. Established are basic factors and regularities of the process of evaporation forming in various natural zones and under different anthropogenic activity. It is shown, that current methods of evaporation value calculation not fully take into account physical processes forming evaporation within the field and forest landscapes and under intensive wind effect. Methods of evaporation value measurement are limited by the weighting evaporimeter of GGI-500-6, used at the Rosgidromet station network. It is necessary to modernize used instrument design and to develop complex of instruments for evaporation measurements within snow-covered forest and under the effect of wind activity. Recommendation on the account of evaporation value from the snow cover surface is given for different periods of the year.

Keywords: snow cover, evaporation, factors, methods for measurements and calculations

Fig. 4. Tab. 9. Ref. 23.

Wind speed in the lower atmosphere: model and experiment.

Drobzheva Y. V., Volobueva O. V., Savenkova E.N., Vinokurova E.V. Proceedings of MGO. 2022. V. 605. P. 138–148.

The paper analyzes the quantitative estimates of the errors in calculating the altitude profiles of wind speed and direction obtained on the basis of the HWM93 model by comparing them with the experimental profiles for St. Petersburg in 2015.

Keywords: wind field, height profile, model, experiment

Fig. 4. Ref. 7.

Statistical models for estimating the maximum size hail.

Sozaeva L.T., Kagermazov A. Kh., Zhaboeva M.M. Proceedings of MGO. 2022. V. 605. P. 149–163.

Methods of multidimensional linear regression analysis were used to estimate the maximum size of hail with a lead time of a one, three and five days. Atmospheric stratification data are obtained from the global model of the atmosphere GFS NCEP with increasing lead time. The actual information on the maximum values of the hail size is provided by the hail control services located within the radius of the representativeness of the actual aerological sounding data at the «Mineralnye Vody» weather station in the Central part of the North Caucasus. In the course of research, models for estimating the maximum hail size with increasing lead time are proposed. It is noted that the availability of initial information about the size of hail that fell to the ground in the territory where no impact on hail processes is carried out would improve the accuracy of regression models.

Keywords: global model of the atmosphere, aerological sounding, timing, meteorological parameters, multidimensional linear regression analysis, maximum hail size.

Fig. 1. Tab. 1. Ref. 16.

Opportunities for optimizing the order of radar observations during anti-hail operations. Zharashuev M.V. Proceedings of MGO. 2022. V. 605. P. 164–172.

The article suggests methods and programs for optimizing the order of radar observations during anti-hail operations. Based on the method of automatic identification of convective cells, it is possible to carry out automatic localization and control of the parameters of all convective cells. Further, according to the criteria for determining the radio echo canopy of hail clouds, it is automated to localize and measure the parameters of the radio echo canopy. Using the program for automatic downloading and visualization of data from weather stations and posts, it is proposed to monitor the situation around the protected area online. This makes it possible to increase the accuracy in tracking the development trend of potentially explosive convective cells. This set of measures will increase the speed and efficiency of anti-hail operations, lower the requirements for the qualification of personnel and will also reduce the cost of providing active impacts on hail processes.

Keywords: Automation, identification, method, hail, impact, optimization.

Fig. 4. Ref. 11.

The effectiveness of anti-hail products of the "Alazan" type at a low zero isotherm in the spring. Liev K. B., Gergokov A.H., Kushchev S. A. Proceedings of MGO. 2022. V. 605. P. 173–184.

The paper describes the use of anti-hail products of the Alazan type, describes the procedure for their work, and conducts a comparative analysis. The reason for writing the article was the case of missing hail in the protected territory of the Krasnodar Territory on April 21, 2022, one of the factors of hail was the low level of the zero isotherm, which is typical for the spring period.

Keywords: hail, active influence, damage, hail cells, hail hazard, zero isotherm, anti-hail products, Alazan-9.

Fig. 6. Tab. 1. Ref. 5.