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The conference proceedings include the theses submitted at the VIIIth International scientific conference of young scientists, PhD students, Master`s degree students, and students «Actual environmental problems» in English, which was held in November 22–23, 2018 at the International Sakharov Environmental Institute of Belarusian State University.

The proceedings are reffered to a wide range of expert, lecturers of higner and secondary educational establishments, PhD students, Master`s degree students and students.

The measurement report of the gamma background

Measurement region	Device indication, mR\h			Average indications, mR\h	Control level of the radiation background in Kiev, mR\h
	1st	2nd	3d		
Measurement at the University	12	10	11	11	18
Measurement is the library	8	10	12	10	18
Measurement of granite steps	28	30	32	30	25

DETERMINATION OF THE TOTAL DOSE OF IONIZING RADIATION

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Abstracts contain ways to protect from radiation.

Keywords: ionizing radiation, absorbed dose, equivalent dose, effective dose.

Ionizing radiation is called one, that leads to the formation of ions (charges of different signs) in the environment.

Types of radiation doses:

Absorbed dose is a fundamental dose quantity D representing the mean energy imparted to matter per unit mass by ionizing radiation. The SI unit is joules per kilogram and its special name is gray (Gy).

Equivalent dose is a dose quantity used in radiological protection to represent the stochastic health effects (probability of cancer induction and genetic damage) of low levels of ionizing radiation on the human body. It is based on the physical quantity absorbed dose, but takes into account the biological effectiveness of the radiation, which is dependent on the radiation type and energy. The SI unit of measure for equivalent dose are:

the *sievert,* defined as one Joule per kg.

or the *roentgen equivalent man* (rem), equal to 0.01 sievert, is still in common use.

Calculating equivalent dose from absorbed dose:

$$H_T = \sum_R W_R \times D_{T,R}$$

where,

H_T is the equivalent dose absorbed by tissue T;

$D_{T,R}$ is the absorbed dose in tissue T by radiation type R;

W_R is the radiation weighting factor defined by regulation.

Radiation weighting factor

Radiation	Radiation weighting factor (W_R)
Photons	1
Electrons, muons	1
Photons, charged pions	2
Alpha and other nuclear fragments	20
Neutrons	Varies with energy

Effective dose is the tissue-weighted sum of the equivalent doses in all specified tissues and organs of the body and represents the stochastic health risk, which the probability of cancer induction and genetic effects of ionizing radiation delivered to those body parts. It takes into account the type of radiation and the nature of each organ or tissue being irradiated. The SI unit for effective dose is the sievert (Sv) which is one joule/kilogram (J/kg).

Effective dose = Equivalent dose × tissue weighting factor

Effective wholebody dose:

100mSv × 0,12 = 12 mSv

Radiation has always been a natural part of our environment. Natural radioactive sources in the soil, water and air contribute to our exposure to ionizing radiation, as well as man-made sources resulting from mining and use of naturally radioactive materials in power generation, nuclear medicine, consumer products, military and industrial applications.

There are three factors that control the amount, or dose, of radiation received from a source. Radiation exposure can be managed by a combination of these factors:

- <u>Time:</u> Reducing the time of an exposure reduces the effective dose proportionally.
- <u>Distance:</u> Increasing distance reduces dose due to the inverse square law.
- <u>Shielding:</u> The term 'biological shield' refers to a mass of absorbing material placed around a reactor, or other radioactive source, to reduce the radiation to a level safe for humans. Almost any material can act as a shield from gamma or x-rays if used in sufficient amounts.

METHOD FOR ESTHETIC APPEAL OF THE TERRITORY'S ASSESSMENT TO ECOLOGICAL TOURISM DEVELOPMENT

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The valuation methodfor complex assessment of esthetic appeal of the recreation territory forecological tourism development is offeredInthe work. The Peculiarity of it's application for Belarus is discussed.

Keywords: ecotourism, ecotouristic resources, score method of assessment.

Before the middle of the XX centurythe relationship between the human and the nature had complementary character. The rapid growth of population and, respectively, increasing in requirements of society in nature resource – became he course of decreasing carrying capacity of natural complex.Ecotourism is a form of tourism involving visiting relatively undisturbed natural areas, and means responsible travel to natural areas conserving the environment and improving the well-being of the local people [1]. Ecotourism has increasing popularity in Europe and Belarus the last decade. The problem of natural territories' carrying capacity assessment for their safe use is actual.

There is no uniform technique for assessment of the territory for justification of need of implementation of development of ecotourist projects within the natural protected territories in Republic of Belarus.The essential resources forsustainable ecotourism development as natural, as cultural and historical objects. Theyr needs be taken into consideration for territory assessment for introduction of ecotourist projects. Therefore the technique of complex assessment of resources of the territory for development of ecotourism is offered.

For assessment of natural capacity of the territory it is necessary to estimate two categories: environment and natural resources. Orographical, hydrological, bioclimatic, balneological characteristics belong to the category «environment». To category «natural resources» – landscape, floristic and faunistic resources.

Within the cultural and historical capacity of the territory categories are considered: the material objects of culture and non-material manifestations of creativity.

For estimation of floristic and faunistic resources it is possible to take the selection criteria of species of flora and fauna for excursion display recommended by specialists of Institute of zoology of National Academy of Sciences of Belarus as a basis:

1. the uniqueness of a look, that is this look can be seen only in the explored territory in Republic of Belarus;

2. the nature protection status of a look (the quantity of types of the international and national status of protection is counted);

3. stability of number – seasonal or constant existence of vegetable community (animal population) in the excursion territory – is a guarantor of inclusion of this object in an ecotour;

4. lookattraktivnost degree;

5. degree of a specific variety of vegetable communities, populations of representatives of fauna; represents a ratio of such indexes as quantity of types with stable number (quantity) and the areas of the administrative region in thousands of square kilometers.

One of the most important indexes at assessment of esthetic appeal of the territory to development of ecotourism is a landscape variety which technique of the characteristic following criteria are offered: index of the relative wealth; index of a landscape variegation; index of landscape complexity.