Development and application of devices for measuring ultra-weak natural fields radiation 99

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Development and application of devices for measuring superweak natural radiation fields

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Medico - environmental firm " Light 2" for the period 1990 ... The 2009 g . developed and a number of devices for measuring ultra-weak electromagnetic fields of the natural field of the Earth and re-emitted by various objects . These devices , represent a selective receivers electromagnetic fields in the range of 5 ... 10 kHz , with the calculation of the phase integral shift at the measured frequency . Sensitivity from units to hundreds of picovolts . Devices differ from standard gauges selective fields , so , that instead of resonant LC circuits, a pulse filter is used , providing a " narrow " bandwidth in the form of one spectral line , characterizing a specific tuning frequency , and a phase-sensitive detector instead of the amplitude one , which allows you to measure the relative phase shift of the oscillations , allocated by a pulse filter [8 ... 21].

The IGA- 1 device belongs to developments in the field of ecology , medicine and underground intelligence and can be used :

- Detection of human exposure to the anomalies of terrestrial radiation , in including , electromagnetic in the so-called geopathic zones , for example , when placing hospital beds , planning workplaces , when construction of residential buildings .
- To fix the boundaries of human exposure technopathogenic computer equipment and other electronic equipment and inspection effectiveness of protective devices .
- Biofield measurements for the purpose of medical diagnosis and test different effects on a person , as psychophysical , psychotropic drugs , bioenergy amplifiers and protective devices .
- Underground exploration of metallic and non-metallic pipes , voids , water veins , burials .
- Settings and debugging of torsion generators .

Fig . 1 shows the functional diagram of the IGA- 1 device .

Materials of the international scientific conference . Hosta , Sochi , 25-29 on August 2009 g .

Fig . 1. Functional diagram of IGA -1.

The IGA- 1 device contains a sensor in the form of a receiving antenna 1, made in the form a conductive plate of a round , square or other shape in plan and being electrically small compared to the wavelengths of the operating frequency range ; external integrator 2, which input is connected to the antenna 1, moreover , the integrator 2 contains a preamplifier 3, the first inverting input of which is the input of external integrator 2, pulse filter 4, the first input which is connected to the output of the preamplifier 3, the generator of the reference

frequency 5, the output of which is connected to the second input of the pulse filter 4,
AC amplifier 6, the input of which is connected to the output of the pulse
filter 4, phase detector 7, the first input of which is connected to the output of the amplifier
alternating current 6, and the second input is connected to the output of the generator 5, internal
integrator 8, the first inverting input of which is connected to the output of the phase
detector 7, block 9 for noise background correction , the output of which is connected to the second
the input of the internal integrator 8, the first feedback loop , including the block
10 setting the feedback coefficient , the input of which is connected to the output
integrator 8, and the output - with the second non-inverting input of the preliminary
amplifier 3, a direct current amplifier (DCA) 11, the inverting input of which
connected to the output of the integrator 8 and the second feedback loop , which includes
differentiating block 12 and non-linear element 13 of the " zone " type
insensitivity ", connected in series , the input of the differentiating
block 12 is connected to the output of the UPT 11, and the output of the nonlinear element 13 is
connected to
the third inverting input of the preamplifier 3, the output of the UPT 11
is the output of integrator 2; in addition , the device contains a reset button 14
external integrator 2, connected to the second input of the differentiating unit
12 and short-circuiting when pressed, the capacity of block 12, which is

storage capacity of external integrator 2; low-pass filter 15, input
which is connected to an external output of the integrator 2, t . e . with the output of UPT 11 and
indicator element 16, for example , of an arrow type , the input of which is connected to
filter outlet 15.

The IGA- 1 device makes it possible to protect living organisms by determining
localization of anomalous inhomogeneities of the electromagnetic field in space
over the investigated surface , determining the configuration of their exact boundaries for
appropriate redistribution of protected living organisms (or their places
permanent or frequent stay). Identification of dangerous places in the spatial
the picture of the field above the investigated area and the redistribution of protected objects
reliably guarantees their protection against harmful effects such as electromagnetic
component , and from components of another nature .

As it is known , that there is a geopathic zones coinciding topology
superposition of anomalies of fields of various nature (magnetic , electromagnetic
radio range , ultraviolet range , increased radioactive background ,
climatic anomalies and , possibly , still unknown nature), then the most
a radical defense is the choice of a safe place by one of the simple
registered components of radiation using the IGA- 1 device .

The IGA- 1 device (Fig . 1) works as follows .

The receiving antenna 1 is placed parallel to the surface under study on
the required height level , as a result of which the antenna 1 forms an electrical capacitance with
the investigated surface and is one of the plates . As a result of the application
antenna 1 with electric midget dimensions , ie . e . antenna , which
geometric dimensions are negligible compared to dimensions
it has taken the wavelength , the selective amplification on any - any particular
operating frequency does not occur , and therefore such an antenna is
broadband and accepts all noise signals as the wanted signal .

The noise signal from antenna 1 is fed to the input of external integrator 2,

operating as a result of the capacitive nature of antenna 1, as an integrator of the input current , t . e . as an antenna charge amplifier 1. After amplifying the noise signal in preamplifier 3, the first input of which is the input of an external integrator 2, the amplified signal passes through a narrow-band pulse filter 4 with a bandwidth of a fraction of a hertz , where the frequency component of the noise signal at the frequency of the pulse voltage , generated generator 5, which has the ability to rebuild .

After amplification of the signal in the AC amplifier 6, the amplified signal of the frequency the noise component enters the first input of the phase detector 7, the output whose signal is proportional to the magnitude of the phase difference between the reference signal oscillator 5 and the allocated frequency - hydrochloric component signal , received by the antenna 1, t . e . noise signal .

Further , the phase difference signal is fed to the (inverting) input of the integrator 8, to non-inverting input of which the noise background correction voltage is supplied from the output of the correction block 9. The resulting signal from the output of the internal integrator 8, weakened in block 10 for setting the feedback coefficient , which is a voltage divider , is fed to the input (second non-inverting) preamplifier 3, where the noise is subtracted from the input signal .

Thus , due to the coverage of the second internal integrator 8 by a loop of reverse communication , the entire path from the input of the preamplifier 3 to the output of the integrator 8 works as a low-pass anti-aliasing filter , which is necessary for anti-aliasing ripple at the output of the phase detector 7 and increasing the conversion accuracy the magnitude of the phase shift into a constant voltage . The value of the coefficient the transmission of block 10 in the feedback loop is also set by the coefficient strengthening of the specified path .

The smoothed voltage , proportional to the phase difference , further amplified in the DC amplifier 11 and through the differentiator 12, which is capacitive feedback and responds to changes in this voltage and non-linear element 13 is fed to the third inverting input preamplifier 3, where the noise is also subtracted from the voltage .

Thus , after the working arrangement of the antenna 1 is motionless in parallel the investigated surface , the oscillation phase of the generator 5 and allocated by the pulse filter 4 of the frequency component , equal in frequency to the oscillations of the generator 5, as a rule are not equal , as a result of which at the output of the phase detector 7 is observed voltage , the averaging of which by the integrator 8 with the first feedback loop through block 10, gives a voltage , the level of which is proportional to the value phase shift . This phase shift is taken as the noise background and compensated by the voltage subtracted from it from the output of the correction block 9 , which is regulated to the value of full compensation , so that at the output of the integrator 8, the voltage was zero .

After that, the integrator 2 is reset by button 14, which short-circuits the capacitance differentiator 12, resulting in the voltage at the output of the filter of the lower frequencies 15 and , accordingly , the readings of the indicator 16 are equal to zero .

Then, the working movement of the antenna 1 in the direction of the search begins in parallel surfaces at a constant speed . In this case, when antenna 1 enters the zone an electromagnetic anomaly, an increase in the phase difference occurs relative values , taken as the interfering level , whereby

there is an imbalance of the integrator 8 and the appearance of voltage at its output , proportional to the given increment of the phase difference . This tension is growing amplifier 11 and fed to the blocks of the second feedback loops 12 and 13.

In the case , when the increment of the phase difference output DCA 11 is small and does not exceed the dead zone of the nonlinear element 13, for example , in the case of natural spatial fluctuations of the field , which are interference or at the boundary electromagnetic anomaly , the second feedback loop is open , in

as a result, only the direct path antenna 1 - indicator 16, integrator 2 is switched off and does not integrate , and the voltage from the output of the UPT 11 comes through the filter

15 directly to the indicator 16, the fluctuations of the arrow of which are proportional instantaneous phase increments . These deviations of the indicator hand 16 are reversible , if you return the antenna 1 back to its original location .

In the case of entering the zone of an electromagnetic anomaly, the value of the phase difference the selected frequency component from the output of the pulse filter 4 and oscillations with the output of the reference generator 5 increases , which leads to an increase in the area pulses at the output of the phase detector 7 and an increase in the voltage level on the output of the integrator 8, proportional to the value of the phase shift . As a result this , these changes are transmitted through the differentiator 12 and if the voltage on it output exceeds the dead zone of element 13, then the loop (second) of the reverse communication , consisting of a differentiator 12 and element 13 is closed , resulting in external integrator 2 is turned on and it starts to integrate selected phase difference .

In this case, if the phase difference does not disappear , then at the output of the UPT 11 is observed the rise of the signal up to the value of the saturation voltage of the DCL 11, this is voltage enters through filter 15, filtering out voltage surges at transient processes , at the input of the indicator 16 and is displayed .

Thus , an arbitrarily small value of the phase difference is sufficient , exceeding the dead zone of the nonlinear element 13 to cause deviation (rotation) of the indicator arrow 16 to the limit , moreover , the speed of this deviation is proportional to the phase difference minus a constant value dead zones .

Stop indicator arrows 16 in any - any position means the disappearance of phase difference (exit from the anomalous zone), and a decrease in the indicator readings 16 corresponds to a change in the sign of the phase difference . The unit of indication can be taken time of one deviation (rotation) of the indicator arrow 16 to the end of the scale (similar to turning a mining vine) while moving at a constant speed over the area under study , measured in steps for one turn of the arrow , in meters per one turn or in seconds per one turn (especially when the observer moves in transport).

Thus , the device allows you to register and evaluate even the smallest phase shift deviations at two different spatial points . Performance amplifier of the internal integrator 2 in the form of a functional converter voltage - phase , including the direct path from the preamplifier 3 to UPT 11, allows you to decouple the input and output of the integrator 2 and implement in this regard high gain , resulting in higher sensitivity devices in comparison with known ones .

When performing further measurements, the integrating
capacity 12 by closing its plates with the reset button 14.

The choice of the value of the integrating capacity of the integrator 2 in block 12 is made from conditions for a compromise between the value of the overall gain (the less capacity , the greater the gain) and a sufficiently long time integration for the convenience of registration (the larger the capacity , the more integration time).

The very circuit of the IGA- 1 device is built on classical radioelements and represents a radio receiver for ultra-weak fields in the range of 5-10 kHz , but its construction (functional diagram), as well as an unusual form and antenna design for a given frequency range , possibly allows capture and torsion component t . e . antenna IGA -1 is most likely torsion field sensor . The IGA device is built according to the radio receiver scheme (however , this scheme is not quite usual , in the 50s there were regenerative receivers , then they were replaced by the superheterodyne , t . e . close to that).

A feature of the IGA- 1 instrument in comparison with another similar geophysical the equipment is to improve the accuracy of determining the localization and classification of anomalies of electromagnetic fields , boundaries of geopathogenic zones terrestrial radiation and geological anomalies - water flows , faults , karst emptiness , increased noise immunity , and information reliability .

PHASOAUROMETER (stationary device , on the basis of which a portable IGA- 1 device) is intended for measuring and evaluating the aural electromagnetic fields emitted by a person . Before measuring, the antenna is retracted to a distance 1 ... 1.5 meters from the biological object , the device is balanced under specific interference environment of the room , and then moving antennas towards a person with visual control of the device indication . IN the moment of crossing the antenna boundary of the phase surface of the field is fixed distance to the human body . Approbation and clinical application of the device was carried out on the basis of several medical institutions in the city of Ufa . Research We have shown , that the phase surface in a normal healthy person , and is is an ellipsoid at a distance of 50 - 75 cm from the skin . Completely different the phase aura has a form in persons with various diseases . Appear strain , relevant anatomical - topographical location pathological process in the organs .

Research , carried out by staff of the Department of Neonatology and Perinatology Bashkir State Medical University in the maternity hospital and the children's republican clinical hospital , allowed to determine the fundamental possibility of using phase aurometer for the diagnosis of pathological conditions in children , including newborns and premature infants . As a result , it was found that children, as well as in adults , a phase aura is determined at a distance of 30-50 cm from skin . The obtained results show the relationship of the distortion of the aura with pathological change in the child's body . Conducted research It demonstrated , that the possibility of resolving the device is 30 mm , m . e . appliance allows you to localize the pathological focus within thirty millimeters in diameter .

Nikolay Vasilievich Kalashchenko , associate professor of the Bashkir State Medical University , conducted
studies of several thousand adult patients (1989-1991 g .) on the basis of
Republican Clinical Hospital . Kuvatova , as a result appeared
fazoaurometrii procedure , approved by the Ministry of Health of the Republic of Bashkortostan
[44], and received a patent for the invention . Working frequencies of reception have been determined
device , in which the electromagnetic aura distortion confirmed
pathological processes in the body [15, 26, 35].
In 1995 year FAZOAUROMETR device discussed in the Scientific Commission -
technical issues of the defense industry of the Russian Security Council ,
it was decided to introduce it to identify at an early stage mental
deviations of military personnel and employees of special services . However, the chairman
Malei Mikhail Dmitrievich died , and the work was suspended .
Nevertheless , given the fact , that the IGA -1 - a portable version
PHASOAUROMETRA , some consumers of the IGA- 1 device later became
use it to measure human biofields . In the Republic of Bashkortostan
the IGA- 1 device was used to measure the biofields of athletes and workers
Ministry of Emergency Situations during scientific research by Associate Professor of USATU
Goryukhin
Alexander Sergeevich together with the Department of Psychology of the Bashkir State University
led by Professor Amineva GIST Abdullovich (1999 g .). Some years
(2000-2003 g .) With the device IGA -1 engaged teacher Bashgosmeduniversiteta
to . m . n . Nazimova Gulzhan Turdimuratovna , who was able to use this device
as a diagnostic equipment , and as a feedback element for
research and treatment of female infertility , as well as menopause and
premenstrual syndromes . The results of her work were included in the book she published
INFERTILITY (2000 g of). And a number of articles , which apparatus is described in detail
PHASOAUROMETER , IGA- 1 and measurement technique [28 ... 38]. Also carried out
measurement of biofields with IHA -1 before and after correction of psychophysiological
the state of students and athletes according to the method of spiritual and health - improving
workshops associate professor of Bashkir State University clinical psychology , to . m . n .
Nazhimovoy D . T . (2007-2009 g .) [24].
In addition , IGA- 1 was used to measure the biofields of premature infants.
children head . Department of Maternity Hospital No. 4 Bogdanova Svetlana Yurievna , for
monitoring the effectiveness of treatment of premature infants in a screened medical
Yuri Kravchenko chamber structure (1999-2001 g .) [36].
Since 1999 , the associate professor of the Department of Childhood Diseases has been engaged in the measurement of biofields
BSMU Voinova Margarita Vyacheslavovna , who together with students (now
already doctors) Almaz Mirsaev and Rustem Valeev conducted research
biofields of pregnant women in the process of prenatal preparation , as well as
newborns [39 ... 41].
Their work BIOENERGY FEATURES AND INTERACTIONS IN
SYSTEM OF THE FATHER - MOTHER - FRUIT - CHILD was reported in C . Petersburg at the congress
" New Medical Technologies - 2001" and won first place in Pediatrics .
For the first time in world practice, studies of electromagnetic biofields have been carried out

pregnant women using a portable PHASOAUROMETER - IGA device -
1, in order to replace the ultrasound diagnostic ultrasound equipment ,
currently used to study the pregnancy process , and
affecting the studied patients - a woman and her fetus , on an environmentally
a safe technique for studying their electromagnetic biofields . The same
young scientists applied a safe technique to study the condition
newborns , including premature babies with various pathological
deviations . Researchers have gone further , and have mastered the processes of measurement
separation of the biofields of a pregnant woman and a child during childbirth , as well as
investigated the influence of the father's biofield on pregnant women and their fetus . Moreover,
between
biofields of the fetus and the child's father forms a " communication channel " when it approaches
a pregnant woman , and if a stranger is suitable , then their biofields
repel each other . In the process of childbirth, you can see how the mother's biofield embraces and
hugs the biofield of the newborn [40].
Subsequently , starting from 2002 g of ., The use of devices IGA -1 Measurement
human biofields by the method of phase aurometry has found application in the development and
introduction of protective devices (made in Russia and Ukraine) against impact on
human geophysical anomalies (geopathogenic zones), as well as technopathogenic zones ,
from the effects of computers , mobile phones and other electronic equipment .
Firms producing products ROTAN , Forpost and Foton , use IGA devices -
1 in the process of production and sale (show , how the bio-field size
human or the boundary of computer radiation), companies manufacturing products
Gamma -7, DAR , VITA , including AIRES matrices when distributed in the field
their products [42, 43].
The further development of the phase aurometry method was the research carried out with
with the help of IGA- 1 instruments by the Volyn Center for Historical and Geophysical
Research " Exactly - Surenzh " (g . Exactly , Ukraine) [25], which allowed except for the
intensive biofield shell , fixed earlier , fix a whole series of
shells around a person , this was also reported by other researchers ,
working with IGA- 1 devices , for example, Viktor Beloglazov from Kirov .
In g . Exactly for the study of the human aura, an effective technique was developed ,
allows you to confidently measure up to 8 sheaths of the aura in conditions of increased
energy pollution of the room . Although it should be noted , that the actual
more shells . The shells closest to the human body (less than 20 cm) are not
were measured . And , probably , there are shells at a distance of more than 7 m . They are not yet
can be measured from - the limited technical capabilities of the equipment .
Probably , the shells go off to infinity . Thus , every person
integrated into the energy - information space of the Universe and the Cosmos as a whole
and makes up a single whole with him , like everything that exists .
The technique is exactly that , that IGA -1 is still on
the bar (with the possibility of height adjustment), and a person approaches the installation ,
which is applied for the first time . This makes it possible to measure precisely the boundaries of the
shell of the going
(investigated) person , which excludes false positives from various
energy planes , such as Hartmann , Curry grids , phantoms, etc. , that

observed with a stationary object of research (a person) and a movable

apparatus IGA -1.
Portable small-sized version of the PHASOAUROMETER - indicator
geophysical anomalies IGA -1. When moving the device along the investigated
the surface of the Earth or inside buildings and structures of any number of storeys is carried out
locating geophysical anomalies in the form of networks (Hartmann ,
Kurri) and energy spots of natural and man-made origin .
The natural fields of the Earth form *geopathogenic zones (GPZ),* representing
are local geophysical anomalies . The entire surface of the globe is covered
grids of electromagnetic lines about 10 cm wide and a cell pitch of 2.5 x 2 m -
Hartman network 5 x 6 m - Currie network 16 x 16 m and more . d . These grids , overlapping each other
friend , create a complex picture of geophysical anomalies on the Earth's surface , and in
points of intersection, small foci 10 x 10 cm in size are formed , where
the radiation intensity rises sharply , long-term stay in which
(work or sleeping places), contribute to poor health and development
severe diseases , such as cancer , multiple sclerosis , osteoarthritis .
Signs of a prolonged stay in a geopathogenic zone are : unexplained
irritability , weakness , headaches , fear , possibly burning or
tingling of the skin . In geopathogenic zones, people may have cardiac
arrhythmia , changes in blood pressure and body temperature [1]. Especially a lot
research in this area was carried out in Germany , Switzerland , Belgium ,
France , Austria [2-4]. One of the first problems of geopathogenic zones
became interested in the German scientist Gustav von Pohl , who published the results
of his work in the prestigious medical journal for cancer research
diseases . Analyzing his observations , made in Bavaria , he came to
conclusion , that is common to all 58 people who died from cancer in the study was the city
then , that their beds were in geopathic zones .
In 1976 year the fundamental book E was published in Germany . Hartman
DISEASE AS A LOCATION PROBLEM [5], summarizing
long-term results of the author's work on the study of the influence of geopathogenic zones
on people's health . Geopathogenic zones are of two types - natural
origin , usually associated with voids , water flows ,
mineral deposits ; another kind is a zone of man-made
origin , associated with human activities - tunnels , underground ,
mines , pipelines , cable networks , landfills , burials . Almost before
the present time, the GPZ was determined only using a vine , a pendulum , a bio-frame
[one]. In recent years, studies conducted abroad , related to the
determination of geophysical anomalies on the ground using various
methods : radar , chemiluminescence , radiation and others
measurement methods [2, 3, 6]. All this equipment has a large volume and
is installed on a trolley or mobile carrier and , in most cases , is not
adapted for research inside residential and industrial premises .
In addition , the correlation with ILI , lockable these methods , were very
unstable .

In 1992 , a small-sized electronic device was developed in Bashkortostan
to determine geopathogenic zones by the electromagnetic component of radiation -
indicator of geophysical anomalies *IGA- 1* [7], protected by Russian patents and

copyright certificates of the USSR [8-21]. When moving the instrument along investigated surface of the Earth or inside buildings and structures of any number of storeys locating geophysical anomalies in the form of networks is carried out (Hartman , Kurri) and energy spots of natural and man-made origin . The device is designed as a portable sensor with visual display , weighing no more than 1.0 kilograms and , connected thereto cable unit nutrition . Medico - ecological firm Light- 2 organized production IGA- 1 instruments based on the defense enterprise of the aerospace Instrumentation (g . Ufa), the main consumers - the sanitary inspectorate and ecological centers . Since 1994 , more than 250 IGA- 1 devices of various modifications .

Survey of apartments and workplaces in enterprises using the developed in Ufa equipment - indicator IGA -1 - allowed for the first time in world practice to reveal the relationship between the size of the geopathogenic grid and human health [22]. It was determined , that people , staying at meshes mesh size from 80 to 120 cm , more often have health deviations and experience unexplained ailments . it can be explained by the higher probability of hitting intersections of networks with lower the size of the cells for a work or sleeping place .

In addition , the device allows you to determine geopathogenic spots with a size of 0.5 ... 2 m ^{2} , which have not been recorded or studied before [21]. It turned out , that long-term being in these zones leads to a depressive state and hallucinations .

At the same time, in places of intense terrestrial radiation, cases were noted cancer of people living in apartments , located one under the other , as well as cases of suicide . The latter took place against the background long-term depressive states , and a characteristic dependence on the fact that the beds of these people were in geopathogenic zones .

In 1997 , Cyprus , Larnaca hosted an International Seminar on the problem geopathogenic zones , which was attended by scientists from Austria , England , Brazil , Cyprus , Canada , Sweden , CIS , where it was reported on the work related to research of geopathogenic zones in Russia and demonstrated the developed in Bashkortostan device IGA -1. At the same time, foreign researchers of geopathogenic zones were able to personally verify the effectiveness of this device .

The venue for the seminar was not chosen by chance , at the request of the mayor's office . Aradippou (district center of Larnaca province) associated with increased child mortality from leukemia in this city , in May 1995 a Russian ecological expedition , where via device IGA -1 were examined four schools , two kindergartens , apartments in houses where there were deaths , administrative buildings . Research has shown , that under the houses , where the children died leukemia , it took a powerful stream of water , which is of - of the total desert the nature of the terrain , gave very contrasting differences in geophysical radiation ,

recorded by the IGA- 1 device . Checking with the IGA- 1 device allowed " blindly " detected by the testimony of the device all the beds , where the children slept , bolevshie leukemia , in these places there was an increase in the electromagnetic background . In all In some cases, recommendations were given for the rearrangement of sleeping places and workplaces . Similar cases , when a newly constructed building in the district center Gorgaza Yazykovo and under the House of Press in Ufa turned out to be a water vein , were recorded in Bashkortostan , and the employees of JSC GAZ - SERVICE immediately after the move became

complain of discomfort and deterioration in well-being . In press House (g . Ufa)
there have been cases of hardware failure , located on a water vein , as well as three
a person died of cancer , whose jobs were above the water vein .
Management of GAS - SERVICE serious about this issue , including
environmental control for geopathogenic zones of industrial premises
gas companies of the republic in labor protection measures . As a result of checks back in
two gorgas, the relationship of increased terrestrial emissions with
oncological diseases of workers , and in Sterlitamak Gorgaz at
one workplace in several years, 4 people died from cancer and one was
disability .
Studies of the impact of geopathogenic zones on health were carried out in Bashkortostan
under the leadership of the head . Department of Childhood Diseases, Bashkir State Medical University
Professor Elza Nabiakhmetovna Akhmadeeva [26, 35]. Using the IGA- 1 device
environmental studies were carried out in the maternity hospital No. 4 and the Republican
Children's Clinical Hospital , with the result that hospital beds were
placed in the safest place . According to the reviews of the chief doctors in these
in medical institutions there was an improvement in indicators . For nine years
IGA- 1 device is used in the Sanitary Inspection of the Ufa Branch
Kuibyshevskaya railway and Kirovskaya branch of the Gorkovskaya railway , during this period
environmental surveys of geopathogenic zones were carried out in organizations
railroad .
Based on the work carried out, the following *conclusions* were *drawn* :

- The intensive care unit and ward preterm infants -
children , are in geopathogenic areas , slowly recovering and
more often the disease ends in death ;

Τηε presence of a child in a geopathogenic zone leads to a deterioration in sleep and
appetite , increased anxiety , and as a result, developmental delay ;

- Prolonged presence of the child in geopathogenic zone can lead to
serious illnesses .

Thus , geopathogenic impacts pose a great danger to
health and should be taken into account in our daily life together with others
environmental factors .
The further development of the device IGA -1 is - underground exploration device . Appliance
fixes the distortion of the electromagnetic field in places of soil inhomogeneities at
there is underground public - any items . The device is designed to search under

ground metal and non-metal (including polyethylene)
pipelines [19], as well as human bodies [16] by changing the phase shift by
the border of the transition of environments . Detection depth of pipelines , voids , up to 20 meters ,
human bodies and small objects up to 3 meters , water veins
are found at depths of up to 60 meters . The devices have been tested on a number of
industrial enterprises , for the detection of corpses, the device was first used
in the village . Neftegorsk earthquake after 1995 g . on Sakhalin .
Studies of tectonic faults in the earth's crust and karst processes with
using the IGA- 1 device are carried out in the process of urban planning
surveys at JSC PGP " Tula - nedra " and " Ufa - Archproekt ", LLC " Diakont " at
Bashtransgaz [23].

The urgency of this subject is , that there is currently no
portable and robust device , allowing to determine the location
nonmetallic communications , not energized cables , as well as living , and
people killed under the rubble . Available in service in parts of the Ministry of Emergency Situations
highly sensitive acoustic devices can be used to search
Only people with absolute silence , and under the condition , that the victim creates
noise . The devices available in the Ministry of Internal Affairs for the detection of corpses , working on
principle of the gas analyzer did not find application in parts of the Ministry of Emergency Situations ,
as they interfere
the smell of burning out buildings , as well as with a large number of victims, the general
the background of cadaverous odors does not make it possible to work with this equipment . In our
there are also no devices for reconnaissance of the location in the country and abroad
non-metallic (polyethylene , ceramic , asbestos-cement) pipelines .
In the summer of 2000 g of . the IGA- 1 device in the version of a mine detector [20, 21] was tested in
TsNII 15 MO for the possibility of detecting anti-tank ,
anti-personnel non-magnetic mines and deep-lying
unexploded land mines , positive feedback received . More detailed questions
related to underground exploration using IGA- 1 instruments are described in [23].
IGA- 1 devices have been introduced in many cities of Russia , as well as Belarus , Ukraine ,
Uzbekistan , Kazakhstan , Tajikistan , Moldova , the Baltics , Austria . Greece ,
Cyprus , Germany , France , Romania , Sweden , Switzerland , USA , Canada ,
Colombia , South Korea and Australia .

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