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5, .56-58 ., 1991 .

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No.10, .59-63, 1993.

Introduction: The present work is dedicated to the assessment of a problem that is of primary importance for the space and ground-based missions, i.e. – to the human organism as a complex bios stem and focus of all projects for space exploration and utilization. This problem is not to be solved without the automatic digital systems for data acquisition and processing for study of the psycho physiological status and working ability variation mechanisms in closed ecosystems characterized by processed dynamics during space mission of varying duration [1, 2].

4. Rournen Nedkov, **Stoyan Tanev**, Svetozar Simeonov, Plamen Trendafilov. Intelligent module for determination of the differential sensitivity threshold under stimulation. No.11, .93-96, 1994.

Summary: Methodology and intelligent digital module are suggested in this paper for the determination of the differential sensitivity threshold in Space situation under somatosensoric stimulation. A process of linearization of the stimulating signal is described in the suggested methodology this attaining higher accuracy and objectiveness in the determination of the differential sensitivity threshold in Space situation. The structure and the characteristics of the intelligent module implementing the described methodology are given. The results from methodology and module tests and applications in Germany (DM Centre) are positive.

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1. 110 , . 161-165, 25-26 2002 .
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6. . . . , . . . , . . . ,
„90 , . 48-54, 22-23
2004 .
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7. . . . , . . . , . . . ,
„90 , . 55-60, 22-23 2004 .
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8. St. Tanev, . Genov, A. Petkov, Pl. Trendafilov Computer processing and analysis of the electrocardiographical signals. Scientific Conference “SPACE, ECOLOGY, SAFETY” with International Participation, 10-13 June 2005, Varna, Bulgaria, pp. 338-342

Abstract: The using of computers gives great possibilities to extract fast and correctly a highly esteemed for medical diagnostic information, which electrocardiographical signals (ECGS) consist. Usually, it is necessary that the ACGs analysis has to cover a long time rang measurement, concominate of accidental accrued disturbances. In this paper we present basic ideas for creating a software, which may clear some disturbances from ECGs signals and for visualizing analysis of the cardio variability.

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18. Stoyan Tanev, Plamen Trendafilov, Petar Genov, Lyudmila Taneva. Fast algorithm for detection of normal and pathological events in long-period electrocardiogram recordings. Aerospace Research in Bulgaria 23, 2009, Sofia, pp. 131-138

Abstract: Fast algorithm based on digital filters is considered it is intended to detect normal and pathologic events in real ECG recordings. The methods for recognition of normal QRS complexes, pacemakers stimuli and supraventricular extrasystoles are described. The results of the data processing performed by a program based on the described algorithm are shown.

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” 1, , 2009 ., . 210-214

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20. „40
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” 1, , 2009 ., . 215-221

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21. „40
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” 1, , 2009 ., . 222-228

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22.
. Fifth Scientific Conference “SPACE, ECOLOGY, NANOTECHNOLOGY, SAFETY” with International Participation 2-4 November 2009, Sofia, Bulgaria, pp. 87-90

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23. Fifth Scientific Conference "SPACE, ECOLOGY, NANOTECHNOLOGY, SAFETY" with International Participation 2-4 November 2009, Sofia, Bulgaria, pp. 91-95

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24. « 2010» XX , 9-13 2010, . 273-276

Abstract: The muscles force is one of physical abilities, which based the whole biological live and sport of human been. There are a lot of different forms of muscles force. Different characteristics and terms for them were established As: isometric force, dynamic, ply metrical, maximal and ext. The right measurements of every one type depend from metrological rules following. One part of them are principal. The others, which established the main goal of our research, depending from specifics of the process. As one example some of them are: the human physical abilities belongs to the latent parameters, for which there are not units; the measurements of those parameters can be not direct ,only indirect; there are a lot of difficulties about biological and mechanical factors determinations ;the "dine type" muscle force dividing is in possible ;the human muscles are all the time in movement collaboration and single muscle force to be measured is in possible ;and so one. Finally it can be concluded, that it is necessary to systematize the metrological specific problems of human muscle force measurements and give solutions of there answers. The answers included in there content some apparatus systems on that field measurements, which the authors in many years were established.

25. 2010, .22, . 92-97

Abstract: Created unique portable equipment is PC based and galvanic separated from the investigated subject. Technique supports two electromyographic channels with sampling rate 10 kHz and measurement precision of 12 bits and one channel for measurement of applied tension level. Data are processing with the specialized software. Equipment is able to measure and analyze parameters of motor unit action potential and average potential of global EMG (duration, increasing of velocity depolarization, propagation of excitation along the muscle fibres and power spectraof EMG). Equipment can be used for evaluation of the peripheral muscle fatigue, level of training of muscles and different pathologic changes in the propagation of excitation of muscle membrane as well as in the laboratory and field conditions.

26. Ivan Dimitrov, **Stoyan Tanev**, Petar Getsov, Plamen Trendafilov, Hristo Hristov, Lubomir Aleksiev, Svetlin Doshev. Scientific Research Complex for the Study of Human Operator in Extreme Conditions. Resent Advances in space Technology, June 09-11, 2011, Istanbul, Turkey, pp. 825-828

Abstract: In paper is presented a research complex which will recreate as closely as possible the diversity of the real working environment with appropriate incentives and will register the necessary examination of physical, physiological signals and parameters. Apparatus complex will simulate close to real work situations, will include tests necessary to assess the psychological status of the research subject. Further ahead in the complex algorithm will monitor the overall conduct of the experiment will record and process information from all physiological channels: electro miograma, electrocardiogram, blood pressure, pulse wave, respiration rate, galvanic skin response. The operator will receive visual and auditory information from the computer complex and will communicate with him through a special keyboard, standard optical mouse, track ball, stick and pedal controls. It is proposed methodology for conducting comprehensive studies of operator in extreme conditions. The developed complex will contribute to enhancing the skills of operators of mission-critical systems - pilots, pilots, operators of unmanned aerial vehicles, astronauts, heads of air traffic, nuclear operators and drivers of public transport.

27. P. Getsov, V. Popov, Hubenova Z., G Sotirov, K. Metodiev, **St.Tanev**. Use of technology virtual reality for the study of human – operator in extreme conditions. Scientific Research Complex for the Study of Human Operator in Extreme Conditions. Resent Advances in space Technology, June 09-11, 2011, Istanbul, Turkey, pp. 820-824

Abstract: Astronaut's training includes self-forming a mental model of the upcoming flight. In fact, this model consists of images of the actual and forthcoming situation of the upcoming space flight, formed on the basis of information surplus and multiple models, more or less adequate to the situation. In this regard, the article proposes an experimental methodology to develop a conceptual model and study of basic human mental models as a control system in case of perception, accumulation and processing information and knowledge, making decisions and performing control activities in extreme conditions. A discussion is held about the possibilities of applying the technology of virtual reality \VR\ application in modeling and testing the man as a control system.

28. **Stoyan Tanev**, Ventricular Beat Detection and Classification in Long Term ECG Recordings. INT. J. BIOAUTOMATION, 2012, 16(4), 273-290

Abstract: The QRS detection is key component of each automated ECG analysis. For this purpose a lot of QRS algorithms have been already developed. In the same time the number of new published methods continues to grow up. This implicitly proves the impossibility of building such detector that could totally cover the variety of all shapes of ventricular beats encountered in practice. Generally, limited studies on discrimination between normal (sinus) and ectopic beats are available.

The paper describes very fast procedure for accurate QRS detection in long term ECG Holter recordings, followed by classification of the complexes in normal and ectopic. The algorithm was tested with the widely accepted AHA and MIT-BIH databases. The obtained sensitivity and specificity are comparable to other published results.

29. **Stoyan Tanev**, Plamen Trendafilov, Hristo Hristov, Svetlin Doshev, Blaga Rousseva and Dimitar Baturov. Scientific Research Complex "BeOn-1" Performance Indicator of the Operators in Extreme Conditions. Journal of Earth Science and Engineering, Volume 4, Number 11, November 2014, pp. 675-683

Abstract: Complexity of the systems in everyday life of modern man continuously increases, as the monitoring and the management are concentrated on and depended on the reactions of one operator or a group of operators. Sometimes because of human errors in extreme situations, it increases the potential risk for life of large groups of people and of the operators. This requires continuous improvement of the systems for psycho-physiological assessment by developing the new efficient methods involving known and new indicators of psycho-physiological state of the individual. The complex BeOn-1 is a new computer-based experimental and applied system for examination of situational vigilance and behavior of aviation specialists-pilots, navigators, operators of unmanned aerial vehicles in a complex operating environment with extreme impact factors. In the up-to-date systems for evaluating the operators, the test results are compared and analyzed together with a number of physiological parameters that are used as indicators of psycho-physiological status of the investigated subjects. In the "BeOn-1" they are indicators about the efficiency of individual stress coping strategy. BeOn-1 allows us to study the individual skills of perception and the ability to act under extreme conditions of the operational environment and is a comfortable working methodology for daily needs in the selection, periodic monitoring of the operational staff and support to flight safety.

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2014 ., . 107-115 ”, 9-10

Abstract: A method for stabilizing the altitude of burst is suggested, which uses digital processing of the signal on continuous measuring of its amplitude and incessant comparison of the received values for two altitudes with constant difference. The operation with non-modulated constant probe radio signal and operation with frequency modulation has been looked into. An algorithm for analysis and assessment of the signals has been developed.

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