

VOJENSKÉ VZDELÁVANIE A VEDA

MILITARY EDUCATION AND SCIENCE

Vladimír JANEČEK

Abstract: Military education and science. Global problems in the changing world require a reevaluation of the content of education and also the scientific research in the military field. University graduates must be prepared both for the practice at their posts and for their influence on the development in new technologies, and development of natural sciences and humanities. Such a readiness demands not only a good quality educational activity of pedagogues but also their activities in military research, science and works published in this sphere. Therefore it is the right decision to change the title and the content of the new science journal „Science & Military“ published by the Academy of the Armed Forces of the General M. R. Štefánik in Liptovský Mikuláš.

QUANTUM STRUCTURES, HILBERT PROBLEMS AND MILITARY ACADEMY IN LIPTOVSKÝ MIKULÁŠ

Anatolij DVUREČENSKIJ

Abstract: The Slovak school of quantum structures belongs to a leading group of this theory in the world. It started in late Sixties, and its origin in Slovakia is connected with the names like Prof. T. Neubrunn, and Prof. B. Riečan. Then this theory was built up at the Institute of Measurement of the Slovak Academy of Sciences and the last twenty years the main Slovak center of quantum structures is at the Institute of Mathematics of the Slovak Academy of Sciences. In the middle of the Eighties, Prof. Riečan moved at the Military Academy in Liptovský Mikuláš, where initiated a group of young mathematicians that was concentrated to quantum structures. We are very glad that the most important contribution of the School of quantum structures at the Military Academy, D-posets, inspired many experts in quantum structures.

PROGNOSTICKÁ HODNOTA PRIJÍMACÍCH SKÚŠOK PRE ÚSPEŠNOSŤ ŠTÚDIA NA AOS

PROGNOSTIC VALUE OF ENTRANCE EXAMINATION FOR SUCCESSFUL STUDY AT THE ACADEMY OF ARMED FORCES

Eva DROBNÁ, Ferdinand CHOVANEC, Iveta MOLNÁROVÁ, Emil ONDIS

Abstract: Considering the task of forecasting educational achievement and state of preparation for professional military career authors give the partial analysis of entrance examination, level and abilities of applicants and admitted students, and the mastering of the studies in their first term. This beginning of longitudinal research has an ambition to give a rise to the creating of new study standards and start points for the branch human resources department in projecting staffing.

UTVÁRANIE A ZMENY ŠTÝLOV UČENIA ŠTUDENTOV AKADEMIE OZBROJENÝCH SÍL GENERÁLA M. R. ŠTEFÁNKA V LIPTOVSKOM MIKULÁŠI

FORMING AND CHANGING TEACHING STYLES TO STUDENTS OF THE ACADEMY OF THE ARMED FORCES OF GENERAL M. R. ŠTEFÁNIK IN LIPTOVSKÝ MIKULÁŠ

Pavol HAMAJ, Miroslav KMOŠENA

Abstract: The paper deals with the theoretical analysis and typology of styles of teaching to university students in general and their application for specific conditions of the educational process at the Academy of the Armed Forces of general M. R. Štefánik in Liptovský Mikuláš. It points to the importance of diagnostics as a starting point for rational interventions to the ways of preparation and teaching styles. It also includes partial suggestions and recommendations based on theoretical and methodological principles and the analysis of empirical data obtained in a survey. The recommendations are oriented to removal of the information deficiency concerning efficient study by means of propedeutics, works published and upgrading methodological preparation of teachers.

PROGRAM FUNDING IN RELATION TO PROPERTY PROCUREMENT WITHIN THE MINISTRY OF DEFENCE OF THE CZECH REPUBLIC

Petr MAREK, Alena LANGEROVÁ

Abstract: The program funding system in the Czech Republic does not have a long history. The program funding system was developed and implemented in the years 1994 - 2000. Within the Czech Republic defence department it has become one of the main instruments for property procurement. Currently mostly long-term tangible assets and long-term intangible assets are acquired through use of this system.

CRISIS MANAGEMENT AND SECURITY IN SIMULATION ENVIRONMENT

Pavel NEČAS - Stanislav SZABO - Pavel BUČKA

Abstract: This paper describes the problems of the crises management and security in simulation environment. For collective defense is important to carry out Article 5. Today's military operations in Bosnia, Kosovo, and Macedonia are not strictly NATO or EU-led, but include members of both organizations and partner nations. NATO-EU cooperation starts a revised NATO Strategic Concept, so is a common European - level approach to defense force structures. The Strategic Concept should reflect the realities. The Strategic Concept includes three Strategy Adjustments, which are described in chapters 6-8. A revised Strategic Concept should highlight the points described in chapter 7. By not adopting Combination Warfare into the Alliance's Strategy, NATO members may or may not restrict their ability to conduct successful offensive and defensive operations in the future.

TELESCOPING SERIES

Emil ONDIS, Lubomír MYDIELKA

Abstract: The paper presents the necessary and sufficient condition of uniform convergence of series of rational functions, that ensures the existence of summation of so called functional telescoping series. In addition, some relations for the sums of telescoping series are proved.

KLASIFIKÁTOR DIGITÁLNÍCH MODULACÍ ZALOŽENÝ NA BÁZI OPTIMÁLNÍCH HODNOT KLÍČOVÝCH PŘÍZNAKŮ

DIGITAL MODULATION RECOGNIZER BASED ON OPTIMUM KEY FEATURES THRESHOLD VALUES

Marie RICHTEROVÁ

Abstract: Communication signals travelling in space with different modulation types and different frequencies fall in a very wide band. Usually, it is required to identify these signals for many applications. Some of these applications are in civilian purposes such as signal confirmation, interference identification and spectrum management. A subsystem used in automatic wireless signal modulation recognition based on the optimum key features threshold values is described in this paper. The choice of maximum value of spectral power density of the normalized-centred amplitude, standard deviation of the absolute value of the centred non-linear component of the instantaneous phase, standard deviation of the absolute value of the normalized-centred instantaneous amplitude, standard deviation of the absolute value of the normalized-centred instantaneous frequency, as key features for the digital modulation recognizer. The results are summarized for real EM signals.

GRID COMPUTING ARCHITECTURE I

Miroslav LÍŠKA, Ján PELÁN

Abstract: "Grid" computing has emerged as an important new field, distinguished from conventional distributed computing by its focus on medium or large-scale resource sharing, innovative applications and in some cases, also high-performance orientation. We present an open *grid architecture* named *ALCHEMI* in which services, application programming interfaces - NET and software approach are described according to their roles in enabling resource sharing.

STROMOVÉ ŠTRUKTÚRY BÁNK IIR FILTROV V SUBPÁSMOVOM KÓDOVANÍ OBRAZOV

TREE STRUCTURE IIR FILTER BANKS IN THE IMAGE SUBBAND CODING

Jozef ŠTULRAJTER, Milan LEHOTSKÝ, Euboš AUGUSTÍN

Abstract: The subband coding of images by IIR (Infinite Impulse Response) filter banks is discussed in the contribution. Various suitable structures of IIR filter banks are treated. Especially the tree and parallel structures are described. The analysis of the properties of these filters in image subband coding is realised and the comparison with the properties of the FIR filter banks is made.

IMAGE THRESHOLDING BASED ON SPATIAL INFORMATION OF OBJECT AND BACKGROUND PIXELS

Luboš AUGUSTÍN, Milan LEHOTSKÝ, Jozef ŠTULRAJTER

Abstract: Image thresholding is an important technique in image processing. Its goal is image segmentation into two parts – foreground and background. Many techniques use only intensity value in order to separate object from background. Finding the correct threshold is often very difficult. The computer cannot see the image therefore we search suitable technique for threshold determination depending on image characteristics. There are many ways to specify the optimal threshold. In the article we describe and compare two spatial methods for optimal threshold determination.

GLOBÁLNE PRINCÍPY A KRITÉRIÁ SITUÁČNÉHO RIADENIA INTEGROVANEJ LETOVEJ PRÍPRAVY A VÝCVIKU PILOTOV

GLOBAL PRINCIPLES AND CRITERIA OF SITUATIONAL CONTROL OF INTEGRATED FLIGHT PREPARATION AND PILOT'S TRAINING

Miroslav KELEMEN

Abstract: The model of Integrated flight preparation and training of pilots, based on the modern methodology of situational control, would be used for improving of our general system of present preparation and training, within the framework of The Model of the Armed Forces of the Slovak Republic 2010 (2015). The article presents the contribution to the Conception of situational control of integrated flight preparation and pilot's training in the field of general methodology of management, within the scientific research SIRIAD No. 129.

CONCEPT AND NECESSITY OF ADAPTIVE INTEROPERABILITY IN CASE OF MILITARY IT SYSTEMS

Sandor MUNK

Abstract: Practically all existing, and planned IT systems' interoperability solutions of our days are built on the same theoretical base, and methodology, using a single standardized intermediary representation. Efficient implementation of a solution based on elementary interoperability model requires existence of specific conditions, and circumstances. Nowadays only theoretical researches discuss the problems of, and solutions for a more complex interoperability environment, but changes in the application environment already require answering questions raising in a dynamic interoperability environment

ELEKTRONICKÁ VOJNA, ELEKTRONICKÝ BOJ A PROSTRIEDKY PVO

ELECTRONIC WAR, ELECTRONIC WARFARE AND MEANS OF AIR DEFENCE

Milan SOPÓCI

Abstract: The article speaks about evaluation of influence jamming effectivity on radars and AD missiles systems.

SECURITY AND SECURITOLOGY

Ladislav HOFREITER

Abstract: The task to ensure human security is a complicated political, scientific-technological and socio-economic problem. As the security itself is complicated, multifactor and hierarchized phenomenon also its investigation has to be of an interdisciplinary character. The character of security environment, the character of security risks and threats and also the character of tools for their elimination are essentially changing. This reality evokes the need to create the system of most general knowledge of security, methodology of its investigation, some “philosophy of security”- science of security.