

Nicoară, T.I., Nicoara, S.V. - Some aspects regarding the energy dissipation on the spillway overfall dam face.....7
Abstract – *The paper refers to the hydraulic computation of reach correlation at spillway dam. There are presented the deficiencies of recommended method in Romanian technical reference literature for spillway flow. It is also proposed a systematization of the computation, tacking into account the real flow structure, including self aerated region.*

Keywords: reach correlation, boundary layer flow, self aerated flow

Nicoară, T.I., Nicoară, Ș.V. - The effect of the self aeration on the design of the energy dissipaters with hydraulic jump13

Abstract – *By applying Rajaratnam's equation for hydraulic jump in self aerated flow, it is emphasized a reduction of stilling basin length about the case of no aerated flow.*

Keywords: reach correlation, self aerated flow, hydraulic jump, stilling basin

Mănescu, M., Stan, I., Bărbulescu, S., Otea, M. - Performances and deficiencies occurred in the applied solution operation for phreatic waters depolution on the oil refinery sites.....17

Abstract – *Long river collaboration between experts from Technical University of Bucharest (UTCB) and other design on research institutes from Romania (ISPIF, ISPH, ARH) and the beneficiaries of the projects in the field of phreatic waters depolution (PETROBRAZI, PETROMIDIA, RAFO-ONEȘTI)produced new solution and approaches. These are based on complex in situ studies lab works, hydro technical and hydro geological originality. In the paper is presented in a short form the behavior of the water depolution solutions applied on the above mentioned oil refinery sites*

Keywords: oil refinery sites, phreatic water depolution efficient solutions

Ion, M., Lazăr, Gh., Șumalan, I. - Major problem of the Danube Delta Ecosystem24

Abstract – *In the last 45 years major negative modifications on the Danube Delta took place. That means the reducing of the birds number but also flora and fauna modifications. This phenomenon was monitorized by Romanian authorities from other European countries, for example Germany, The Netherlands but also USA. For the European country to find an explanation of the phenomena is important in order to avoid for the future similar work which produce birds migration and ecosystem modifications. The paper presents the effects and their causes in order to find and sustainable management in the future for Danube Delta.*

Keywords: Danube Delta, natural conditions, flora, fauna, ecosystem

Mănescu, M., Stan, I., Bărbulescu, S., Otea, M. - Special drainage systems for controlled depressioning of the phreatic water levels29

Abstract – *Water losses from sanitation systems produce phreatic water level arising with unfavorable effects on environment (land falls)ions buildings. To reduce these effects the first efficient method is to depressioning on the phreatic levels by drainage systems. For a long period the horizontal drainage was applied in Romania with low results because of short length (less than 40 m). The proposed technology ensure the laying of the horizontally drains with long lengths (up to 300 -350 m).The paper presents the results of studies and researchers by numerical modeling, hydraulic simulation with the effects of the depressioning of phreatic levels in different projects (i.e. Suceava, 1996, Galati 1998.*

Keywords: water losses, phreatic levels, horizontal drainage system, new technologies

Stroie, L., Rogobete, Gh., Beutură, D., Fomitescu, G- The impact of the slag dump of Sînmihaiu-Utvin area (Timiș county) of the soils and waters35

Abstract – *The need for optimum use of land has never been greater than at the present, when rapid population growth urban expansion are making available for agriculture a relatively scare commodity. The slug dump is located at 10 km of Timisoara city, on the Sînmihaniu Roman land with a surface of 50 ha. This slug dump represents a real risk for the environment and the population. Data obtained from soil, water spontaneously and cultivated vegetation indicated the negative impact, especially by storage dust and heavy metals.*

Keywords: slug dump, soil water, impact

Ion, M., Lazăr, Gh., Șumalan, I.- The Danube River and Danube Delta – Past and present43

Abstract – The Danube river is the biggest Europe’s River by considering as East boundary the Volga River. In the last years the ecological issues of different phenomena became more priority especially in the Danube Delta. The paper is focused on the problems related to the evolution of some characteristic parameters of the river and Delta which can make possible the setting of the conclusions.

Keywords: Danube Delta, Danube River, natural conditions, navigation

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Abstract – The paper presents some possible concepts regarding the collecting and capitalization of nutrients from waste waters produced in rural settlements or small urban communities. In the concept of sustainable development of the public sanitation, the nutrients like nitrogen, phosphorus or potassium can be considered not only pollution sources for water coarse but also basic nutrients for agriculture developing.

Keywords: public sanitation, nutrients, capitalization

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Abstract – The paper analyzes the main parameters which favors the suspension separation from crude waters in terms of filtration type, the nature and structure of porous media in order to capitalize the whole its retention capacity. All factors which in homogeneous and no homogeneous structure favor the purification processes are distinguished. By applying the equivalence principle it was possible to establish the criteria by which the retention capacity of filters are capitalized. Ascending and descending filtration processed were used with different parameters for grain’s size and their density

Keywords: suspensions separation, filter retention capacity, water purification

Popescu, I., Popescu, A. - Knowledge Management Tools for Qualitative Water Projects55

Abstract – Since the computers apparition the possibility of huge amount of necessary information to the processed is increased. Moreover the research in the civil engineering are very fast and advanced therefore is necessary to apply in practice knowledge management is the knowledge map. The present paper shows the concept named “knowledge map” and offers the directing steps in order to choose and draw a such system

Keywords: knowledge management, knowledge maps, text mining, civil engineering

Guțiu, S., Beilicci, E., Achim, C., Barabas, K., Boncia, F. - Erosion and Sedimentation Processes. The effects on the Water Quality on the Upstream Bega River59

Abstract – The water management of the surface water resources in the upstream Bega River’s hydrographic basin has as goal the water quality monitoring, satisfying in the user’s water demand, protection against the flooding and operation procedures of the water structures. The studied river section has got major modification both in hillside state and water quality. The analysis of the soil erosion processes was performed based on the torrential rainfall, runoff evolution, water turbidity and alluvial discharge. The evolution of these processes in evolution ends by a global balance and calculation programs.

Keywords: water management, hydrographic basin, water demand flooding, erosion processes, global balance

Guțiu, S., Barabas, K., Beilicci, E., Achim, C. - The effect of soil erosion processes on the environment quality. Case study: hydrographic basin Upstream Bega River65

Abstract – The hydrographic basin Upstream Bega River consists in three different pouring sub basin in which erosion processes occurred. The erosion processes the basin configuration during the time but also the environment quality by alluvial discharge and eutrophication. The studied area are includes individual basins characterized by control sections with the possibility of soil and water monitoring.

Keywords: hydrographic basin, alluvial discharge, environment, monitoring

Popa, Gh., Pavel, M. - Rehabilitation methods of the production drilling wells71

Abstract – In the paper we looked to present the benefits from using a sand-trap device with pressure water stream. By using this kind of plant the ground water pump station efficiency is considerably increased due to proper well cleaning. The considered plant can significantly reduce the maintaining cost for a ground water collection front by reconsidering the financial support toward the drilling of new wells for replacing the stuffed ones.

Keywords: well shaft, collection front, sand-trap device, filters

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Abstract – The paper presents the parameter evolution analyze that defines the behavior of the Calimanesti Oas Dam, referring to the structure response at different loadings. By analyzing the studied parameters a normal operation of the water structure resulted that proving an efficient and qualitative drawing, performing and

Keywords: soil settlement, infiltrations, aggradations

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Abstract – Geosynthetic products doesn't represent anymore a news in engineering works, existing today laws and standards which regulates their usage in different fields. The development that get the usage of the geosynthetic products in the last years can be explained on the one side by natural product replacement and on the other side because of their high performances. This products appeared 40 years ago and still further diversified, in many cases a certain product being produced exclusive for a given project. Water constructional works certainly represents one of pioneer field for the geosynthetics products and one of the full possibilities for their usage.

Keywords: geosynthetics products, technical performances and characteristics, water structures

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Abstract – Stability of the river courses and the protection of bordering bands are maintained through bank consolidation. There are presented six types of arrangement. For each type is colmated the special investment needed for 1 m² of consolidated bank. The solution providing both small values of investment and maximum hydrological efficiency are recommended.

Keywords: break out, gabions, riprap, faggot, investment

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Abstract – The world-wide preoccupations manifested in the last two decades concerning the introduction of new quality concept in many domains drawn attention of the Romanian scientists. Also this time is necessary the interdisciplinary collaboration of the experts from interfacing fields to implement and realize in a certain studied field the associated quality concept. The paper presents the studies concerning the introduction of the quality concept in the field of environmental engineering in Romania, member of international organization. The researches from Technical University of Civil Engineering from Bucharest in association with Romanian authorities are working together to introduce new technologies end exploitation methods for water industry and environment quality.

Keywords: quality concept, interdisciplinary, water industry, environment quality

Popa, Gh., Constantin, A.T. - Consideration regarding the water fall variation at an hydropower plant93

Abstract – In the paper is presented a theoretical relative study for the working stage of a hydro-electrical power station, in two operating conditions: a. taking the benefit of the available head, depending by time; b. taking the benefit of only the maximum head. For each operating condition there is determined the yearly produced power. In the end, the favorable operating condition is emphasized based on the maximum produced power criteria.

Keywords: water flow, hydraulic head, efficiency, hydropower, mean yearly electric-power

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Abstract – The paper is intending to present an up to date structural analysis at the lock chambers with central temporary joint. This kind of lock chamber with particular characteristic of its structure offers an interesting field of study of the constructed elements. The analysis is focused on the Romanian lock chamber located on Iron Gate I arrangement on Danube River.

Keywords: gate chamber wall, central temporary, joint, finite elements, solid

Popescu, A., Nicoară, Ș.V., Constantin, A.T. - New methods of calculation in a drawing of coastal structures103

Abstract – Once the computers have developed extensively in last few years, so has the method for computation of the civil engineering structures. Coastal structures in particular are complex and new models for computation have emerged. This paper presents a mathematical model, using the artificial neural network method, to compute the optimum height of the vertical breakwaters. The method is illustrated in the example and compared with Goda's classical method. The method proved to give very good results if enough measurements were taken at the site where the breakwater was built. condition is emphasized based on the maximum produced power criteria.

Keywords: vertical breakwater, artificial neural networks, coastal structure design

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Keywords: navigation lock gate, stress, finite element method, in-situ measurements

Lazăr, Gh., Nicoară, Ș.V. - Numerical analysis of a system consisting in vibrating roller and compacted material113

Abstract – The paper presents the way by which using finite elements, the vibratory roller – compacted material system behavior can be determined. The dynamic system was considered in two different situations, with one and with two degrees of freedom. The system's answer was established over one oscillating period of the vibrating device for two specific situation of the compacted material dry density, each at several levels for the moisture content. The

vibratory compaction plant is considered to work on a fill of the fine poorly graded silty sand. The 2D considered analyze was performed by SAS IP Inc. Company.

Keywords: *dynamic compaction, vibratory roller, fine silty sand, moisture content, finite element method, 2D modeling displacement*

Constantin, A.T., Muj, S. - Using finite Elements Method for structural and comparative analysis of a weir sill119

Abstract – *In this paper are presented the resembles and differences between the results obtained for a hydrotechnical structure by running two computer programs both based on the finite element method: SAP 90 (SAP 2000) and ANSYS 6.1. By modeling the structure in the two mentioned programs, it is emphasized the requirement for permanent improvement of the user skill with the updated computer programs. The recent structure analysis programs consider many simplifications regarding the structure's modeling, the requested time being considerable reduced from version to version.*

Keywords: *hydrotechnical structure, concrete small dam, finite element method, modeling increment, stress and strain state*

Muj, S., Popa, Gh., Ion, M. - Consideration regarding accuracy results obtained by different approaches in Finite Elements Method for structural and comparative analysis of a weir sill123

Abstract – *In the paper are presented a series of structure analysis with compared results. The analyzes on the same structure but with different parameters (finite elements type, discretization) produced closed results but also different the studies were performed by Ansys 6.1 program, based on FEM (Finite Elements Method*

Keywords: *linear, quadratic, solid, finite elements*

Constantin, E., Mărăcineanu, F., Semcu, A., Cazacu, C., Roșianu, F. - Promotion at the sustainable feature of the agriculture by land reclamation and improvement arrangements exploitation131

Abstract – *Sustainable agriculture means the obtaining of sufficient yields both in quantity and quality, without damaging the soil and phreatic water protection. In the regions with moisture deficit are necessary arrangements for irrigation and drainage and the exploitation should be made by applying a complex management.*

Keywords: *suistanable agriculture, irrigation, drainage, moisture deficit*

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Abstract – *The need for optimum use land has never been greater than at present, when rapid population growth and urban expansion are making available for agriculture a relatively scarce commodity. The arrangement for fish culture is situated in the West-Plain of Romania. Data obtained from water and soil samples indicated for pH values above 7, a leaching of PO₄ from the ponds but the content was increased and there are conditions for water eutrophication.*

Keywords: *fish culture, land, impact, soil, water*

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Abstract – *By using the rainfall index (RIS) the dryness at the Arad city weather forecast station was analyzed in terms of the total amount of monthly rainfall. The data records were processed based on the resulted graphs it was possible to characterize the dray or wetted periods along 23 years (1980 – 2002).*

Keywords: *data records, rainfall index standardization, dray, wetted periods*

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Abstract – *The paper proposed analytical methods applying for optimized dimensioning of the low tension electric networks. In this case the circulation of the powers and currents is determinate according to cables cross-section which must be set in optimum energetical, economical and technical conditions. For long term exploitation in normal condition the minim cost represents the optimizing criteria.*

Keywords: *electric network dimensioning, minimum cost, analytical methods*