Long Term Dry and Wet Effects on the Engineering Behavior of Subgrade Soil with High Amount of Soluble Salts using Low Cost Stabilizers

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ABSTRACT: The performance of pavements depends upon the quality of subgrades. A stable subgrade and properly draining pavement help achieving high pavement service life. It is evident that the cost of subgrades and pavement materials is a significant portion of the total cost of pavement. The improvement of subgrade characteristics is one of the important factors for road pavement designers. Many stabilizing agents and admixtures have been used to improve subgrade properties. In this study, the effect of four stabilizing agents on the strength and stability of subgrade materials is investigated. These four stabilizing agents are (2.5% CaCl₂, 5% lime, 6% RHA, and 6% kaolin). The results showed that the CBR value of soil with the addition of 2.5% CaCl₂, 5% lime, 6% RHA, and 6% kaolin increased by about (48%, 66.1%, 36.1% and 38%) respectively. While the CBR value of soil with the addition of 5% saw dust decreases to (29%). The total soluble salts (T.S.S) of the treated subgrade samples were analyzed, and the results showed a reduction in both (CBR) value and (T.S.S) with the time.

Keywords: Strength, Rice husk ash, Total soluble salts, Durability, Calcium chloride

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3-D Underflow of a Sluice Gate at a Channel Inlet; Experimental Results and CFD Simulations

Original Article, D75
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ABSTRACT: The underflow of a sluice gate is well known when the gate is set into a channel of the same width (2-D underflow), while the 3-D underflow is known only for relative openings of 0.16-1. The present work investigates the 3-D underflow of a sluice gate and determines the transition into the 2-D regime, with the gate height as the main parameter. Moreover, thereafter discharge coefficients in a more extended range of relative openings were computed for use in the practice.

Keywords: Channel Inlet, Sluice Gate, 3-D Underflow, Discharge Coefficients, CFD Simulations.
The Hydraulic Investigation of Perforated-Cylindrical-Intake Structure


ABSTRACT:
Water surface level regulation and deviation of a constant value of discharge into the side channel, is the basis of the design of a perforated cylindrical intake structure. This study focuses on the analysis of a constant value of discharge into the side channel. The proposed solutions allow precise measurement and control of intake discharge.

Key words: Cylindrical weir-gate; Over-under flow; Intake; Orifice.

Experimental Study on the Seismic Behavior of Retrofitted Concrete Infill


ABSTRACT:
Nowadays, Infill is widely used in retrofitting structures. Low sensitivity to construction quality is one of the advantages of Infill. In this paper, the sensitivity of the system of concrete infill to construction quality is studied. The frictional sliding fuse provides additional friction force and increases the area of the hysteresis loops of the compound frames and consequently increases energy absorption.

Key words: Concrete Infill, Frictional Sliding Fuse, Retrofitting, Strengthening

Structural Elements of Urban Squares from Tradition to Modernity in Iran: A Comparative Study of Isfahan’s Naghsh-e-Jahan Square and Tehran’s Toop-khaneh Square


ABSTRACT:
Modernism, as one of the main achievements of man, has been the source of various changes in the spatial structure of urban squares. While creating a new public space in urban squares, the concept of mobility and the role of vehicles are also considered. In the study of urban squares, a comparison between the historical and modernistic squares can be very interesting. The evaluation of structural elements is a valuable source of comparison in this study.

Keywords: Structural Elements, Square, Tradition, Modernism, Naghsh-e-Jahan, Toop-khaneh.

Evaluation of Nonlinear Static Analysis for Special Moment Resisting Frames

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**Nonlinear Static Method, Special Moment Resisting Frame, Seismic Rehabilitation, Performance-Based Design**

**Comparison of Average Strength Steel Moment Frame with a Thin Plate Steel Shear Wall and Diverging Braced Design Method Based on Performance Levels**

**Coefficient of behaviour, Thin plate steel shear walls, Divergent brace.**

**The Impact of Niatak Lateral Spillway Performance on Process of Erosion and Sedimentation of Sistan River of Iran**

**Sistan River, Niatak Spillway, Erosion, Sedimentation, HEC-RAS model.**

**An Experimental Study on the Effect of Vortex Breakers on Discharge Coefficient for the Shaft Spillways**

**Vortex, Shaft Spillway, Vortex Breaker Plate, Hydraulic Model.**

**Zoning of Flood Caused by Farrokhi Dam Breaking Of Qaen South Khorasan, Iran**

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Rezaei M., Rezvani Mahmuee A., Khaksefidi S.  
ABSTRACT:  
Due to the very high losses caused by breakage of dams, especially with regard to the dams that are constructed in the regions with high rainfall, it is necessary to maintain readiness for dealing with crisis situations, the separation of risk areas is essential.  

Keywords: Dam Break, Flood Zoning, Farrokhi, HEC-RAS  

Study of Intelligent Architecture Techniques along Energy Consumption Optimization with Solar Energy Approach  
Nikbakht H., MehdiNezhad M.R., Allah GholiPour SM  
ABSTRACT:  
Consciously design of the buildings and human residences especially dwelling, with due attention to energy problem can help to reduce the problem especially in the regions with high energy consumption. Each part of the building and human residences, especially dwelling, with due attention to energy problem can help to reduce the problem of energy consumption.