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Geodetic Navigation Satellite Systems (GNSS) are used to record dynamic and semi-static displacements of long, flexible bridges, the deflections of which are of the order of tens of centimeters, or even meters. GNSS data, in combination with other field data such as records of wind parameters, temperature, and acceleration can hence be used to refine bridge models. In "Modal frequencies of bridges from GNSS (GPS) monitoring data- experimental and statistical evidence", Stiros and Triantafyllidis test the potential of simple spectral peaks in GNSS-derived spectra to describe modal frequencies. The study is based on analysis of a large number of experimental data derived from a bridge monitoring project. Data analyzed cover lateral and vertical dynamic GNSS-derived deflections and accelerations of the deck of a bridge before, during and after controlled excitation events. On the monitoring theme, Nguyen and Nguyen propose a new parameter in evaluating mechanical behaviors of defected bridge spans in "Structural health monitoring of bridge spans using Moment Cumulative Functions of Power Spectral Density (MCF-PSD) and Deep Learning". Moment Cumulative Function of Power Spectral Density (MCF-PSD) is based on changes in shape of power spectrum and trained via cumulative function of spectral moment value by deep learning model. This proposed parameter allows evaluating stiffness attenuation along time, thereby helps to forecast the condition of the bridge. The study reveals that training MCF-PSD using cumulative function algorithm has produced encouraging results. The conclusions from the study propose that the change of this function is the basis to evaluate difference among measurement positions in the same span or among different spans of the same bridge and behaviors at different positions in the same span. Bridge safety is of paramount importance to the traveling public and the health of local economies. The redundancy of bridges was heavily investigated in the literature; however, they were focused on twin girder redundancy cases. Additionally, literatures were scarce in studies that focused on the improvement that should be made to achieve redundancy systems in different AASHTO I-girder types. In "Numerical investigation on redundancy of bridges with AASHTO I-girders", Alotaibi et al. focus on assessing the additional required number of tendons for different AASHTO I-girder types and spacing between them to achieve the redundancy of I-girder bridges. The additional unbonded tendons are suggested to be added externally or internally. The parameters varied in this study are compressive strength of ultrahigh-performance concrete (UHPC), spacing between girders (i.e. number of girders) and type of girders. Reinforced concrete bridges in coastal and offshore areas are vulnerable to attack by chloride ions in the marine environment. This leads to corrosion of the reinforcing steel bars, early damage of the structure, and loss of durability. In their paper, Dong et al present the results of "Influence of lateral impact on reinforced concrete piers under drying-wetting cycle and chloride ion corrosion environment". The authors utilize drop hammer impact tests on piers with different corrosion rates obtained from drying-wetting cycle and chloride ion corrosion experiment to study the crack propagation process and failure modes of piers. Then by numerical simulation, the influences of impact velocity, impact mass, compressive strength of concrete and impact number on the performance of corroded piers were studied. The results showed that the failure modes of piers with different corrosion rates under lateral impact were different. The load-bearing structural systems have been developed over time to different levels of complexity. The simple beam system (tree trunk laid across an obstacle) and the arched system (stone arch over an obstacle) date back to the beginnings of human civilization. Development of multiple structural systems for bridges is useful in the design of new bridges and rehabilitation of existing bridges. In "Bridges with multiple structural systems: The example of Trilj Bridge reconstruction in Croatia", Radnić et al. present some existing bridges with multiple structural systems and succinctly discusses design ideas for bridges with such systems. The paper also presents the reconstruction of a pedestrian suspension bridge in the City of Trilj, Croatia. The new bridge's load-bearing structure is composed of a combination of suspension, cable-stayed and stress-ribbon bridge, which is laterally restrained with horizontal tensioned ropes. Numerical analysis was conducted on the renovated bridge. The results have shown acceptable levels of stresses and deflections verifying the structural safety of the restored bridge.

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