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Editorial

This issue of *Bridge Structures* leads off with a paper by Fanning *et al*. on ''Load testing and model simulations for a stone arch bridge.'' The authors discuss service and high load tests on a typical single-span stone arch bridge in the south of Ireland. The three-dimensional finite element models, which were generated using a commercially available finite element package, include the arch fill and a frictionless contact interface between this fill and the spandrel walls modelled with a nonlinear smeared crack material model. This modelling technique has been established for service load levels; however, the paper demonstrates that this modelling strategy is also suitable at higher load levels. In ''Early age cracking of reinforced concrete bridge decks,'' William *et al*. describes the instrumentation and test results of a reinforced concrete bridge deck constructed on three-span continuous steel girders in Evansville, West Virginia, in the US. A full description of the instrumentation system and data collection frequency is provided. The results of the research indicate that elevated longitudinal stresses due to constrained drying shrinkage is the main reason for crack initiation during the first 2 days after concrete placement. Finally, the factors contributing to the deck deterioration are presented and discussed. Reliable bridge condition assessment and early detection of bridge component failures are critical for bridge owners' optimum utilization of available resources. Remote bridge monitoring systems (RBMS) have been perceived to assist periodic evaluation of structures to supplement bridge-management systems with quantitative data, and for examining new design techniques. One of the major issues in developing RBMS is lack of reliable methods to obtain modal parameters using traffic excitation. Alampalli and Cioara address signal processing methods in ''Selective random decrement techniques for bridge monitoring systems.'' The authors discuss the results obtained using data measured from an RBMS installed in New York State bridges in the US. Evaluating bridges using field tests is a useful method for determining a structures *in situ* performance. In ''Experimental influence lines for bridge evaluation,'' Hirachan and Chajes present a method of obtaining influence lines for short-to-medium span bridges directly from truck load tests. The authors compare the experimental influence lines to results developed based on analytical methods to quantify differences between the actual and assumed bridge performance. Finally, the paper presents the results of a recent load test conducted on the South Market Street Bridge in Wilmington, Delaware, in the US.

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