11th World Congress on Computational Mechanics (WCCM XI)
5th European Conference on Computational Mechanics (ECCM V)
6th European Conference on Computational Fluid Dynamics (ECFD VI)
July 20 - 25, 2014, Barcelona, Spain

THE IMPLEMENTATIONS OF THE TAP-SCAN DAMAGE DETECTION METHOD

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Key Words: *Tap-Scan Method, Damage Detection, Bridge, Railway.*

Ten years ago, Yang et al. proposed an efficient and economic method to extract bridge frequencies from the acceleration of a passing vehicle [1, 2], which opens a new direction of bridge inspection. Based on this work and inspired by the hunting behaviour of woodpeckers, Xiang et al. proposed the Tap-scan damage detection method that is features as mounting a tapping device on a passing vehicle [3].

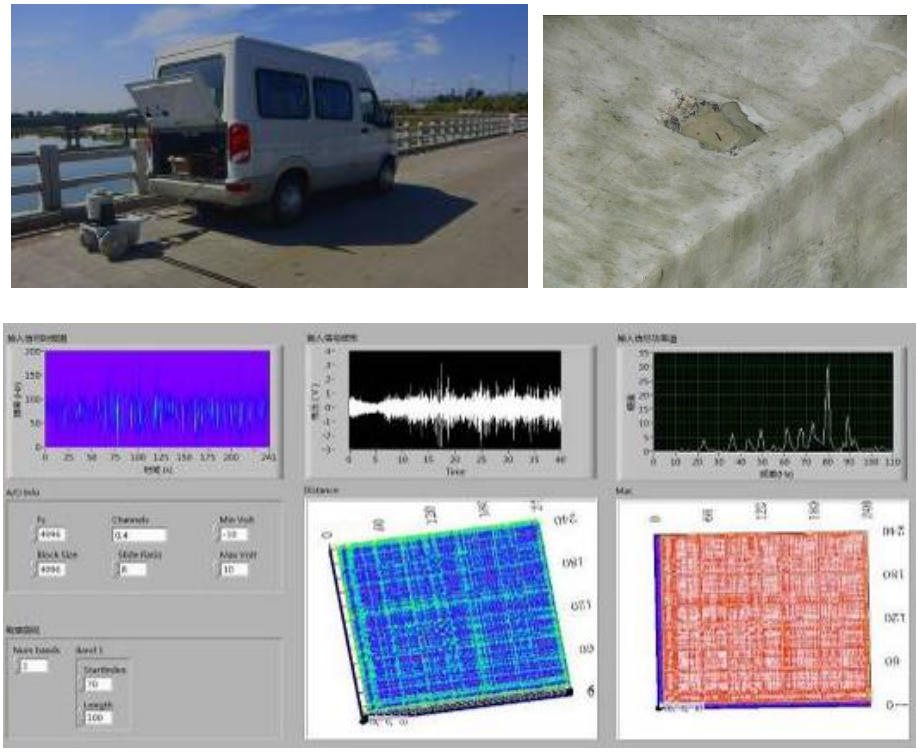

Fig. 1. Bridge damage detection

This talk reports the on-site implementations of a bridge inspection system based on the Tap-

scan damage detection method (see Fig. 1). The results showed the potential of using this system to filter out damaged bridges from large amount of candidates in a short time without stopping the traffic flow.

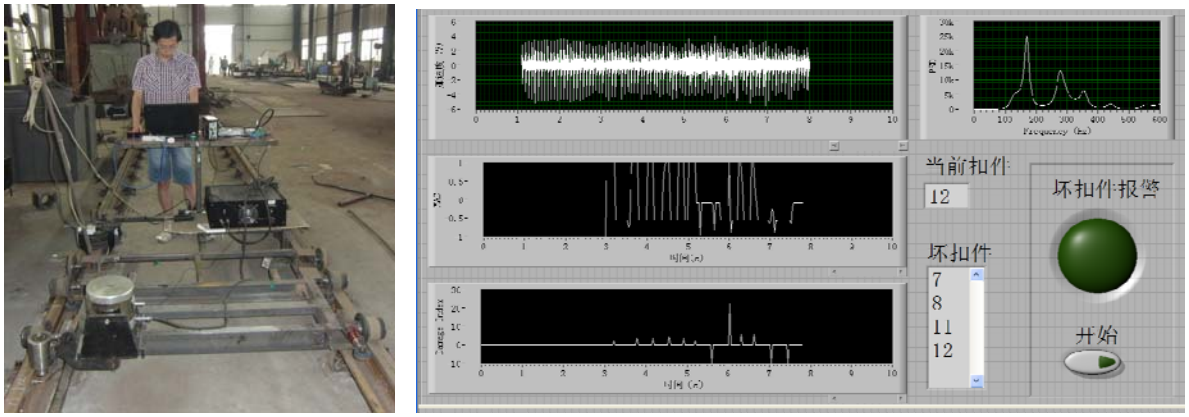

Fig. 2. Rail fastener loosing detection

Besides, a similar system has been built to detect the loosing fasteners on railways (see Fig. 2). The experimental data gave a full evidence of its validity and efficiency.

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