

# DETECTION OF INTEGRITY AND THICKNESS OF CONCRETE STRUCTURES BY TIME WINDOW MEM METHOD

by

Kunio Gokudan<sup>\*1</sup>, Satoshi Iwano<sup>\*2</sup> and Tomoaki Sakai<sup>\*3</sup>

((Received on March 31, 2003, accepted on July 16,2003))

## Abstract

Theoretical consideration and experimental analyses for the detection of the thickness and internal flaws of the concrete plate applying the impact echo methods are described in this paper. As the frequency analyses methods, FFT, auto power spectrum analysis and maximum entropy methods are examined. As a result of the experimental analysis, the time weighted or time window MEM spectrum analysis shows a good performance to detect the internal flaws of the concrete structures.

*Keywords: Impact echo method, Integrity test, NDT, Elastic wave, MEM analysis*

---

\*1 Associate Professor, Dept. of Civil Engineering.

\*2 Itoh Construction Co., Ltd.

\*3 Applied Research Co., Ltd.