Square waves - application for the rock mechanics

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Rock properties, which are rigidity and energy loss, can be estimated from the attenuation of acoustic waves (Q) or the velocity of propagation. Many velocity estimation studies have been done, by the pulse transmission method (eg. JGS2110-1998) and the frequency modulated continuous wave transmission method (eg. ACROSS). However, these methods can not evaluate attenuation and frequency response, or complicates measurement and analysis. In this study, I propose a continuous square wave method for estimating the rock properties. My method can easily apply to existed measure system, and give more information on rock properties.

Continuous square wave method that introduced in this paper, was used to actual velocity measurements at Mizunami. These studies will be presented at S-TT55 session by Ishii et al. and Sano et al. See also these presentation.

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