<<结构工程最新进展>>

图书基本信息

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内容概要

The objective of the symposium (YRGS2010) is to provide a forum for young experts from research and practicing engineering communities working in structural engineering and construction to present their latest development , to exchange the information, to discuss the current problems and address the future challenges in structural engineering. This symposium is also aiming to establish a collaborative network for researchers and engineers in structural engineering within Asia-Pacific area. The present proceedings contain the technical papers that were presented during the 2nd Asia-Pacific Young Researchers and Graduates Symposium that was held in Zhejiang University, P. R. China, 27-28 March 2010. We hope you will find the papers in this proceedings interesting and inspiring.

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章节摘录

With the same set ofwaveforms, travel time data was extracted and the travel time tomography reconstruction was performed by another available algorithm. The calculated velocity and attenuation tomograms are presented in Figure 7, expressed as the percentage of the reference value. Under optimized contour level setting, it was noticed that the attenuation distribution provided a higher contrast to indicate anomaly, while the velocity change was less indicative. It is to be noted however, that the contour level was not the same for both tomograms. By examining the calculated value for each cell, it was found that in the case for cell no. 8 which contained anomaly, its velocity has decreased 45%；whereas the attenuation factor has marked a drastic drop of 99.8% compared to that of the homogeneous concrete. It was also noted that for some of the homogeneous cells, the discrepancy of velocity results was far less remarkable than the attenuation factor, particularly cells no. 3, 4, 6 and 7. Due to the fact that concrete is a type of composite material, the discrepancy in attenuation factor could be attributed to scattering of ultrasonic energy by the concrete matrix itself, which could vary due to local distribution state of aggregates and pores. Nevertheless, with the current findings, attenuation factor can be justified as a more sensitive parameter towards the existence of anomaly compared to velocity. To reduce result discrepancy and improve the reliability of attenuation tomography reconstruction, it would be essential to collect as many observed data as possible during measurement, thus bring forth issues pertaining to optimum combination of mesh discretization, mesh size, amount of observed data etc. to be attended as further study.

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