

## 石质文物风化程度的超声波CT检测

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**摘要** 我国是一个具有悠久历史的文明古国, 拥有大量的具有重要历史意义和价值的文化遗产, 然而, 由于长期的风化作用, 导致它们损伤严重, 亟须对其风化程度进行评价。超声波测试具有检测分辨率高, 对被测物无损伤等特点, 使其成为检测石质文物风化程度的有力手段。从理论和方法上, 对运用超声穿透波CT检测石质文物风化程度的方法进行了探讨, 提出了一套利用超声波CT法检测现场石质文物风化程度和文物材料主要力学参数分布状况的方法。利用这套方法对浙江省义乌市南宋古桥——古月桥桥身条石的风化程度进行测试, 取得了较好的效果。

**关键词** [岩石力学](#); [超声穿透波](#); [石质文物](#); [风化程度](#); [古月桥](#)

分类号

## ULTRASONIC CT DETECTING FOR WEATHERING DEGREES OF LITHOID CULTURAL RELICS

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### Abstract

There are a lot of cultural relics which are of important historic significance and value in China. But, because of long time weathering, these cultural relics are damaged seriously. It is very necessary to assess the weathering degrees of these relics. Ultrasonic detecting is a non-destructive testing method to get the inner information of an object with high resolution, so it is an effective means to detect weathering degrees of lithoid cultural relics. The ultrasonic CT detecting method for weathering degrees of lithoid cultural relics with ultrasonic penetrating waves is discussed theoretically and methodologically, and a set of methods to detect the weathering degrees and the main mechanical parameters distribution of lithoid relics are put forward. By this method, the weathering degrees of the stone bars of Guyue bridge, which was built in Nan Song Dynasty in Yiwu City, Zhejiang Province, are detected, and satisfactory results are obtained.

**Key words** [rock mechanics](#); [ultrasonic CT](#); [lithoid cultural relic](#); [weathering degree](#); [Guyue bridge](#)

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