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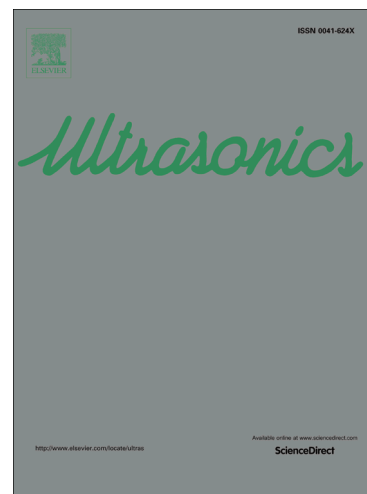
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Mean grain size detection of DP590 steel plate using a corrected method with electromagnetic acoustic resonance

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Abstract:

Electromagnetic acoustic resonance (EMAR) is a considerable method to determine the mean grain size of the metal material with a high precision. The basic ultrasonic attenuation theory used for the mean grain size detection of EMAR is come from the single phase theory. In this paper, the EMAR testing was carried out based on the ultrasonic attenuation theory. The detection results show that the double peaks phenomenon occurs in the EMAR testing of DP590 steel plate. The dual phase structure of DP590 steel is the inducement of the double peaks phenomenon in the EMAR testing. In reaction to the phenomenon, a corrected method with EMAR was put forward to detect the mean grain size of dual phase steel. Compared with the

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