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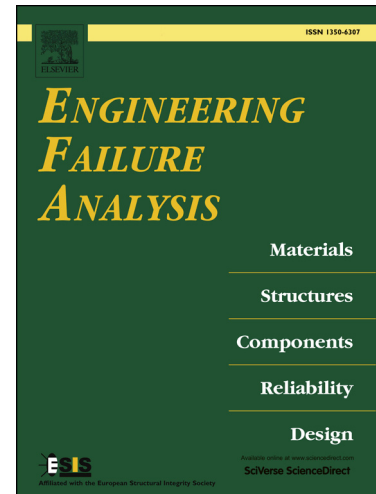
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## Experimental and Finite Element Analysis to Identify the Source of Vibration of a Coach

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**Abstract:** This paper presents an investigation on the cause of severe vibration problem of a coach with four-cylinder engine running at an idle state using vibration and impact hammer modal experiments to obtain the main vibration frequency components and the natural characteristics of the coach. The vibration results indicate that the main vibration component comes from the vibration transmitted from the engine to the chassis frame, which is closely related with the engine idle speed. Based on structural simulation analysis of the coach's chassis frame and comparison with modal testing, the coach severe vibration problem was due to coupling resonance between the engine idle frequency and the

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