Dynamic Response of Steel Girders with Rail Joints during Train Passage

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The aim of this study is to elucidate the mechanism of the increase in the dynamic response of the bridge due to the passage of a train through a rail joint. The numerical results showed that the dynamic response due to the passage of a rail joint is amplified by the resonance that occurs when the excitation frequency with the passage of two wheelsets in a bogie coincides with the natural frequency of the bridge. Furthermore, the impact factor for rail joint is more sensitive to span than the calculation method of design standard and decreases as the bridge span increases.