Dynamic Response Characteristics of Continuous Girder Bridge During Train Passage and a Simple Evaluation Method for Impact Coefficient

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This study organized and generalized the structural specifications of general railway continuous girders and then carried out comprehensive dynamic response analysis of continuous girders during train passage. The impact coefficient of the deflection of the continuous girder shows multiple peaks at the resonant speed for each natural vibration mode. When the number of spans is odd, the 1st and 3rd modes are amplified at the resonant speed, and when the number of spans is even, the 2nd mode is amplified at the resonant speed. Based on clarified dynamic response characteristics of continuous girder, a simple evaluation method of the impact coefficient with the applicable range up to 400 km/h has been proposed, and its validity has been demonstrated.