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On the Use of Dynamic Strains and Curvatures for Vibration Based Damage Localization

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Non model based damage localization using dynamic strain measurements in the absence of training data from the damaged structure is discussed in this paper. The work presented is an extension of the previous works on curvature mode shapes for beams and plates to arbitrary structures. In particular, we show that damage can be interpreted as a local load acting on the undamaged structure which results in a strong strain concentration in the damaged area under certain conditions. The possibility to locate damage using dynamic strain measurements is then demonstrated on two examples: a simply supported beam and a more complex concrete bridge structure.

Ключевые слова:

Содержание.

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