

عنوان مقاله:

Energy-based procedure for detection of crack in stepped-beam like structures

محل انتشار:

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خلاصه مقاله:

In this paper, we presented a simple energy-based procedure for detection a crack in stepped-beam like structures modeled by Euler-Bernoulli beam theory. We modeled the existing crack by a local torsional spring in order to develop energy-based local damage index. We demonstrated a relationship among crack parameters and natural frequencies that it is usable for forward and inverse problems. For detection of the crack in stepped beam, we used first three natural frequencies of beam and presented two different simple methods for solving the related equations : Plotting diagram and numerical calculation. We present the numerical examples for a two-step cantilever beam to validate our method

کلمات کلیدی:

Vibration-based-detection, stepped beam, crack, Equivalent rotational spring

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