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Proceedings of the International Conference on Restoration, Recycling and Rejuvenation Technology for Engineering and Architecture Application; Cesena; Italy; 7 June 2004 through 11 June 2004; Code 64053

## Dynamic assessment of damage evolution in FRP strengthened RC beams (Conference Paper)

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### Abstract

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The use of vibrationally-based non-destructive testing (NDT) technique to assess different damage scenarios of flexural RC beams strengthened with externally bonded fiber reinforced polymer (FRP-EBR) systems was analyzed. The finite element method (FEM) was used to calculate the dynamic properties of the structure in each damage scenario. A parallel dynamic test accompanied each cycle of static test to assess the damage evolution of the beam at each damage level. The presence of damage is detected when the features of the model do not match the reference virgin of the experiment.

### Author keywords

Cracks Damage Assessment FRP Modal Parameter Identification RC beams

### Indexed keywords

Engineering controlled terms:	Acoustic emissions	Beams and girders	Bonding	Concrete construction	Costs
	Dynamic response	Fiber reinforced plastics	Finite element method		
	Identification (control systems)	Mathematical models	Modal analysis		
	Nondestructive examination	Preventive maintenance	Reinforced concrete		
	Vibrations (mechanical)				
Engineering uncontrolled terms:	Damage assessment	Dynamic assessment methods	Modal parameter identification		
	RC beams				
Engineering main heading:	Defects				

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