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Repair of severely-damaged rc exterior beam-column joints with frp and frcm composites

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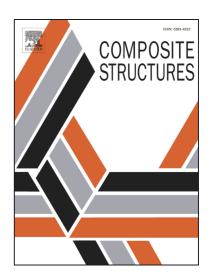
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- 14 **ABSTRACT:** This paper presents the results of an experimental program aimed at comparing the
- cyclic behavior of three full-scale reinforced concrete (RC) exterior beam-column joints repaired with
- 16 externally bonded composites. Preliminary, the specimens suffered significant damage, which
- 17 resulted in a beam-joint (B+J) failure, i.e. shear failure of the panel joint after yielding of longitudinal
- 18 reinforcement in the beam. The damaged specimens were then repaired using either Fiber Reinforced
- 19 Polymer (FRP) or Fiber Reinforced Cementitious Matrix (FRCM) composites, and the same loading
- 20 history was applied to the repaired specimens. The experimental behavior was compared with that of
- 21 original specimens, and results are presented in terms of load-carrying capacity, stiffness
- deterioration, ductility, dissipated energy, and equivalent damping viscous ratio. Results allow to
- clearly identify the contribution of the externally-bonded composites to the overall behavior of the
- 24 repaired specimens.
- 25 **Keywords**: beam-column joint; cyclic loading; FRP; FRCM; reinforced concrete; seismic repair.

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