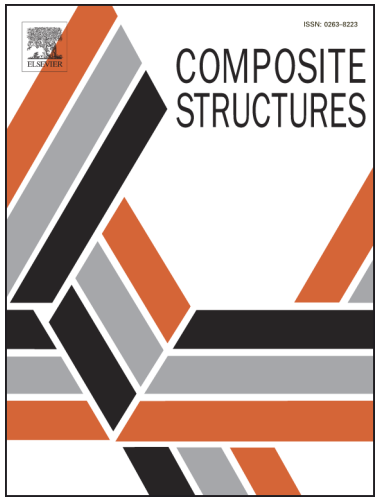

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NUMERICAL CYCLIC BEHAVIOR OF UN-CORRODED AND CORRODED RC COLUMNS REINFORCED WITH HPFRC JACKET

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Abstract

The possibility of using high performance fiber reinforced concrete (HPFRC) jacketing for strengthening and repairing sound or corroded column, was experimentally investigated by some of the authors in previous studies. Once assessed the feasibility and the effectiveness of this technique, in the present paper, a numerical three-dimensional model is developed, with the FEM software Diana, in order to simulate the cyclic behaviour of RC columns reinforced with the HPFRC jacket. All phenomena governing the structural response are suitably simulated, and the effect of the external jacket on the local and global behaviour is highlighted and discussed. Finally, two case studies available in literature, related to both cases of sound and corroded existing columns, are analysed in order to clarify and validate the procedure and to suggest some improvements of the HPFRC jacket technique.