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REPAIR,REHBILITATION AND RETROFIT OF CONCRETE ELEMENTS

1. Chellapandian M, Prakash SS, Sharma A. (2019). “Axial compression – bending interaction behavior of severely damaged RC columns rapid repaired and strengthened using Hybrid FRP composites.” *Construction and Building Materials*, 195, 390-404.
2. Chellapandian, M., Prakash, S.S and Sharma. A. (2019). “Experimental and Finite Element Studies on the Flexural Behavior of Reinforced Concrete Elements Strengthened with Hybrid FRP Technique.” *Composite Structures*, 208, 466-478.
3. Chellapandian M, Prakash SS., (2018). “Rapid repair of severely damaged reinforced concrete columns under combined axial compression and flexure: An experimental study.” *Construction and Building Materials*; 173: 368-380.
4. Chellapandian M, Prakash SS and Rajagopal A (2018). “Analytical and Finite element studies on hybrid FRP strengthened RC square column elements under Axial and Eccentric compression”. *Composite Structures*, Volume 184, Pages 234-248.
5. Surepally, N and Prakash, SS. (2018). “Improved Confinement Model for Reinforced Concrete Circular Bridge Columns Under Static Flexural Loading.” *Journal of Structural Engineering*, SERC Chennai (Accepted).
6. Chellapandian, M, Prakash, SS and Sharma, A. (2017). “Strength and Ductility of Innovative Hybrid NSM Reinforced and FRP Confined Short RC Columns under Axial Compression”, *Composite Structures* 176 (2017) 205–216.
7. Jain S, Chellapandian M and Prakash SS. (2017). “Emergency repair of severely damaged reinforced concrete column elements under axial compression: An experimental study”. *Construction and Building Materials*, 155, 751-761.
8. Goudar, AG, Mondal, TG., and Prakash, SS. (2016). “Analytical and Finite Element Studies on Behavior of FRP Strengthened Beams under Torsion” *Composite Structures Journal*, Volume 153, 1 October 2016, Pages 876–885.

PRECAST AND PRESTRESSED CONCRETE

1. Pachalla, SKS, Kankeri, P., Thammishetti N., and Prakash, SS. “Behavior of Macro-Synthetic Fiber Reinforced PPHCS Slabs at Different Levels of Flexure and Shear “, *PCI Journal* (Accepted).
2. Pachalla, SKS, Dhara, S., and Prakash, SS. (2018) “Experimental Study on Behavior of GFRP Strengthened Precast Prestressed Hollow Core Slabs under Flexure”, *Journal of Structural Engineering*, (Accepted).
3. Kankeri P, Prakash SS, Pachalla SKS., (2018). “Numerical and Analytical Studies on Pre-tensioned Hollow Core Slabs Strengthened with FRP, Overlay and Hybrid Techniques.” *Structural Engineering and Mechanics*; 65(5): 535-546.
4. Kankeri P, Prakash SS, Pachalla SKS., (2018). “ Experimental and Numerical Studies on Efficiency of Hybrid Overlay and Near Surface Mounted FRP Strengthening of Pre-cracked Hollow Core Slabs.” *Structures*, Elsevier, 15: 1-12.
5. Pachalla, SKS and Prakash, SS. (2018). “Load Resistance and Failure Modes of Hollowcore Slabs with Openings – A Finite Element Study”, *PCI Journal*, 63(4):25-40.

6. Pachalla, SKS and Prakash, SS. (2017). “Experimental Evaluation on Effect of Openings on Behavior of Prestressed Precast Hollow-Core Slabs”, ACI Structural Journal, 114(2), 1-10pp. DOI: 10.14359/51689155.
7. Kuntal, V.S., Chellapandian, M., Prakash, SS., (2017). “Efficient Near Surface Mounted CFRP Shear Strengthening of High Strength Prestressed Concrete Beams – An Experimental Study”, Composite Structures, 180 (2017) 16-28.
8. Kankeri, P and Prakash, SS. “Effectiveness of Hybrid Bonded Overlay and NSM CFRP Laminate Strengthening on Behavior of Prestressed Hollow Core Slabs at Different Levels of Combined Flexure and Shear”, Composite Structures Journal (Accepted).
9. Pachalla, SKS and Prakash, SS. (2017). “Load Resistance and Failure modes of FRP strengthened Precast Hollow Core Slabs with Openings”, Materials and Structures Journal, Springer Ltd. Vol. 50, Issue 3, 2017, 14 pp.
10. Kankeri, P., Prakash, SS. (2016). “Experimental Evaluation of Bonded Overlay and NSM GFRP Bar Strengthening on Flexural Behavior of Precast Prestressed Hollow Core Slabs” Engineering Structures Journal, Elsevier, Vol.120, pp. 49-57, May 2016.
11. Pachalla, SKS and Prakash, SS. (2015) “Efficient Near Surface Mounting CFRP Strengthening of Pretensioned Hollowcore Slabs with Opening– An Experimental Study”, Composite Structures Journal, Elsevier, Volume 162, Pages 28-38.

FIBER REINFORCED CONCRETE

1. Joshi SS, Thammishetti N, Prakash SS, Jain S., (2018). “Cracking and ductility analysis of steel fiber reinforced prestressed concrete beams in flexure”, ACI Structural Journal, 115(6).
2. Joshi SS, Thammishetti N, Prakash SS., (2018). “Efficiency of Steel and Macro-Synthetic Structural Fibers on the Flexure-Shear Behaviour of Prestressed Concrete Beams”, Engineering Structures Journal, Vol. 171, pp. 47-55, DOI: 10.1016/j.engstruct.2018.05.067
3. Srikar, G., Goudar AG., and Prakash SS. (2016). “A Study on Residual Compression Behavior of Structural Fiber Reinforced Concrete Exposed to Moderate Temperature Using Digital Image Correlation”, Journal of Concrete Structures and Materials, Springer, Volume 10, Pages 75-85, DOI: 10.1007/s40069-016-0127-x
4. Jain, S., Prakash, SS. and Subramaniam, KVL. (2017). “Monitoring of Concrete Cylinders with and without Steel Fibers under Compression using PZT Smart Sensors”, Journal of NDT& Evaluation, 35(59), Springer, DOI: 10.1007/s10921-016-0376-2

LIGHTWEIGHT CONCRETE AND MASONRY ELEMENTS

1. Rasheed MA, Prakash SS, Raju G, Kawasaki Y., (2018). “Fracture Studies on Synthetic Fiber Reinforced Cellular Concrete using Acoustic Emission Technique,”. Construction and Building Materials; 169: 100–112.
2. Rasheed, A, and Prakash, SS. (2018). “Uni-axial Tensile Behavior of Hybrid-Synthetic Fiber Reinforced Cellular Light Weight Concrete- An Experimental Study using DIC”. Construction and Building Materials Journal (Accepted).
3. Rasheed, MA, and Prakash, SS. (2018). “Experimental Study on Compression Behavior of Fiber Reinforced Cellular Light Weight Concrete Masonry Prisms “, ACI Materials Journal, Volume 115, Pages 149-160.

4. Rasheed, MA, and Prakash, SS. (2015). "Mechanical Behavior of Hybrid Fiber Reinforced Cellular Light Weight Concrete for Structural Applications of Masonry", *Construction and Building Materials Journal*, Elsevier, Vol. 98, pp. 631-640, DOI 10.1016/j.conbuildmat.2015.08.137.
5. Suriya Prakash, S. and Alagusundaramoorthy, P. "Behaviour of masonry wallets and shear triplets retrofitted with GFRP composites", *Cement Concrete and Composites Journal*, Elsevier, Vol. 30, 745-761, 2006.
6. Suriya Prakash, S. and Alagusundaramoorthy, P. "Experimental study on masonry wallets and shear triplets externally bonded with GFRP Composites", *Journal of Indian Institution of Civil Engineers*, Vol. 88, 24-31, May 2006.
7. Suriya Prakash, S. and Alagusundaramoorthy, P. "Behaviour of masonry load-bearing walls retrofitted with GFRP composites", *Journal of Structural Engineering*, 36, No. 2, 73-81, June/July 2007.
8. Prakash S.S., Aqhtaruddin, M., and Dhara, S., (2015) "Behavior of Soft-Brick Masonry Small Assemblies with and without Strengthening under Compression Loading", *Materials and Structures Journal*, RILEM, 15 pp. DOI 10.1617/s11527-015-0695-2.

RC COLUMNS UNDER COMBINED LOADING

1. Kothamuthyala SR, Thammishetti N, Prakash SS, Vyasarayani CP., (2018). "Optimization-Based Improved Softened Membrane Model for Rectangular Reinforced Concrete Members under Combined Shear and Torsion." *Journal of Structural Engineering*, ASCE, (Accepted).
2. Mondal, T.G., and Prakash, SS (2018). "Flexural Hysteresis Behavior of Circular Concrete Bridge Columns an Improved Approach", *Journal of Structural Engineering*, SERC Chennai (Accepted).
3. Mondal T. G. Kothamuthyala, SR and Prakash S.S. (2017). "Hysteresis Modelling of Reinforced Concrete Columns under Cyclic Torsional Loading." *Structural Engineering and Mechanics Journal*, Techno-press, Vol. 64 No. 1, October 10, 2017, 1-12pp.
4. Mondal, T. G., and Prakash, S. S. (2015c). "Improved Softened Truss Model for Behaviour of Reinforced Concrete Circular Columns under Combined Torsion and Axial Compression." *Magazine of Concrete Research*, ICE (UK), Vol. 67 No. 1, 12 pp
5. Goudar, AG, Mondal, TG., and Prakash, SS. (2016). "Improved Softened Membrane Model for Reinforced Concrete Circular Bridge Columns under Torsion" *Journal of Bridge Engineering ASCE*, DOI: 10.1061/(ASCE)BE.1943-5592.0000907, Pages 1-12.
6. Mondal, T. G., and Prakash, S. S. (2015a). "Effect of Tension Stiffening on the Behaviour of Reinforced Concrete Circular Columns under Torsion." *Engineering Structures Journal*, Elsevier, Vol. 92, pp. 186-195.
7. Mondal, T. G., and Prakash, S. S. (2015b). "Effect of Tension Stiffening on the Behaviour of Square RC Columns under Torsion." *Structural Engineering and Mechanics Journal*, Techno-press, Vol. 54, No. 3, pp. 501-520.
8. Mondal, T. G., and Prakash, S. S. (2015d). "Nonlinear Finite Element Analysis of RC Bridge Columns under Torsion with and without Axial Compression", *Journal of Bridge Engineering*, ASCE, Volume 21, Issue 2, DOI. 10.1061/ (ASCE) BE.1943-5592.0000798, 040 (2015).

9. Suriya Prakash, S., Li, Q., and Belarbi, A., "Behaviour of Circular and Square RC Bridge Columns under Combined Loading including Torsion", ACI Structural Journal, 109, No. 3, May 2012, pages 317-328.
10. Prakash, SS., Belarbi, A., and You, Y.M. "Seismic performance of circular RC columns subjected to axial, bending, and torsion with low and moderate shear ", Journal of Engineering Structures, Elsevier, Vol. 32, No. 1, 2010, Pages 46-59.
11. Suriya Prakash, S., and Belarbi, A. "Towards damage-based design approach for RC bridge columns under combined loadings using damage index models", Journal of Earthquake Engineering, Taylor & Francis Group Journals, Vol. 14, No. 3, 2010, pages 363 – 389.
12. Belarbi, A., Suriya Prakash, S. and You, Y.M. "Effect of transverse spiral reinforcement on the seismic flexural-shear-torsional behavior of reinforced concrete circular bridge columns", Journal of Structural Engineering and Mechanics, Vol. 33, No. 2, 2009.
13. Suriya Prakash, S. and Belarbi, A. "Bending-shear-torsion interaction features of RC circular bridge columns-An experimental study", ACI Special Publication-SP265, Vol. 265, 2009, Pages 427-454
14. Belarbi, A., Suriya Prakash, S. and Silva, P.F. "Incorporation of decoupled damage index models in the performance-based evaluation of RC circular and square bridge columns under combined loadings", ACI Special Publication-SP271, Vol. 271, 2010, Pages 79-102

MISCELLANEOUS TOPICS

1. Kolanu, NR., Prakash, SS. and Ramji, M. (2016). "Experimental Study on Compressive Behavior of GFRP Stiffened Panels Using Digital Image Correlation", Ocean Engineering, Elsevier, 114, 290-302, DOI: 10.1016/j.oceaneng.2016.01.034.

JOURNAL PAPERS UNDER REVIEW

1. Chellapandian, M and Prakash, S.S and Sharma A. An experimental study on the behavior of hybrid CFRP strengthened short RC column elements under eccentric compression. FIB Structural Concrete, Wiley Ltd. (Under Review).
2. Chellapandian, M., Jain, S. and Prakash, S.S. Compression Behavior of Short RC Columns Repaired after Cyclic Pre-Damage using Hybrid FRP Composites under Axial Compression. Structures Journal, Elsevier Ltd. (To be submitted).
3. Kuntal, V.S., Chellapandian, M., Prakash, SS., "Effect of Bonding Materials on NSM CFRP Shear Strengthening of High Strength Prestressed Concrete Beams", ACI Structural Journal (To be Submitted)
4. Mondal, T.G., Vyasarayani, CP, and Prakash, SS. "Application of Homotopy Technique in the Parameter Identification of Bouc-Wen Type Model", Mechanics of Advanced Materials and Structures Journal, Taylor and Francis Ltd. (Under Review).