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Simulation of the influence of initial voids on the mechanical behaviour of steel-concrete-steel structures in shear

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ABSTRACT

Numerical tools, including finite element simulations, are considered to investigate the effect of initial voids inside concrete on the mechanical behavior of steel-concrete composite structures in shear. A refined numerical strategy is first defined, including a particular care on the relations between each structural component. Due to high computational cost, progressive numerical simplifications are then discussed to conclude in the most acceptable simplified hypothesis. A parametric study is finally launched and perspectives are discussed.

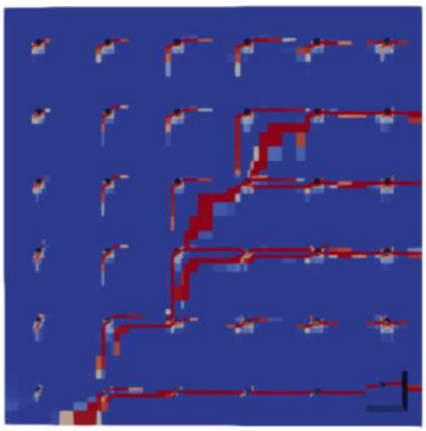

Fig. 1 Damage distribution of a steel-concrete-steel wall in shear, including one void

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