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OUT-OF-PLANE BEHAVIOUR OF UNREINFORCED MASONRY WALLS UNDER SEISMIC EFFECTS: TOWARDS AN ANALYTICAL STUDY

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Abstract:
Nowadays, the consideration of seismic effects on masonry systems is essentially focused on the in-plane behaviour of structural elements and specific guidelines have been developed for ensuring a sufficient safety. Nevertheless, every earthquake is associated with multi-directional solicitations and a preliminary collapse under out-of-plane actions may make the application of in-plane related guidelines helpless if the element is no more available. Therefore, specific out-of-plane related guidelines should be proposed, smartly based on simplified analytical studies. Establishing the accuracy of these last ones requires a sufficient confidence in more complicated calculation tools. The present paper studies in what manner the unit and interaction philosophy, a finite element micro-modelling approach developed for masonry arch system computation, could be transposed for this purpose.

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