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Experimental, Numerical and Analytical Issues on Structural Safety and Strengthening of Masonry Arch Structures

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The masonry arch is an architectural element widely used in buildings and bridges since ancient times. The increasing need of preservation of architectural heritage against strong actions, such as earthquakes, as well as material degradation has induced the scientific community to more in depth analyze the structural response of masonry arches and vaults. Analytical and numerical methods have been widely used in the last decades to understand the behavior of masonry arches and to predict collapse conditions, both in terms of ultimate loads and kinematic mechanisms. The Special Session is aimed at sharing the results obtained by the research in this field, by focusing the attention on the following topics:

- Limit analysis methods
- Nonlinear elastic analysis methods
- Computational approaches (FE methods, isogeometric analysis,...)
- Interpretation of historical issues with modern analytical and computational methods
- Experimental tests with composite materials
- Structural analysis of masonry arches and bridges
- Seismic vulnerability of masonry arches and bridges
- Strengthening of masonry arches and bridges