

The hexagonal dome of Santa Maria del Quartiere in Parma. Static analysis for conservation and structural consolidation.

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Abstract Aim of this paper is show the research activity carried out on the structural problems found in the dome of a church of XVII century, Santa Maria del Quartiere, in Parma, (Italy), as an exemplar case of study on numerical analysis connected to crack pattern critical survey and empiric-experimental analysis method. In this paper, the results of this complex analysis path are presented, coupled with the monitoring data of the last years which had confirmed the collapse mechanism hypothesis. Finally, the recent consolidation project of this dome, consisting in an encircling strengthening coupled with a new configuration of the original timber roof leaning on it, is presented.

Keywords Domes collapse mechanisms, domes strengthening intervention, empiric-experimental method.