# An innovative technique for strengthening of masonry edge vaults: experiments and modeling

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**Abstract** Masonry edge vaults are typical of southern Italy and in particular of Salento. They are constituted by four barrel webs, whose vertex points do not meet at the crown of the vault as in the cross vault but are moved backwards, leaving in the middle an empty space covered with a double-curvature shell portion. This central shell has the shape of a four-point star, for which reason the structure is also commonly termed "star vault". This paper summarizes the main results of an experimental investigation on masonry edge vaults strengthened with fiber-reinforced polymer (FRP) composites and subjected to uniform loading with measurement of the lateral thrust. Test results and theoretical predictions are presented and discussed.

**Keywords** edge vault, fiber-reinforced polymers, lateral thrust, star vault.