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## **AVVISO DI SEMINARIO**

Si comunica che **giovedì 19 gennaio 2017 a partire dalle ore 9.15** si terrà presso l'aula **R2** (via Mesiano 77) il seguente seminario

## Reformulation and extension of the Thrust Network Analysis for masonry vaults Prof. Luciano Rosati

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The Thrust Network Analysis (TNA) is a methodology based on Heyman's principles and is used for modeling stresses in masonry vaults as a discrete network of forces in equilibrium with gravitational loads. It was recently contributed by O'Dwyer (1999) and fully developed by Block and coworkers more recently (2009-2016). Reducing the bias by the quoted authors in favor of a graphical interpretation of the method, Block's version of the TNA is reformulated by discarding the dual grid and focusing only on the primal grid, thus significantly enhancing the computational performances of the method. The proposed reformulation of the TNA is also extended by including horizontal forces in the analysis as well as holes or free edges in the vault. Furthermore, the coefficient matrices entering the solution scheme can be obtained by assembling the separate contribution of each branch, thus avoiding the ad-hoc node numbering and branch orientation required by Block's approach. Numerical examples, some of which referred to vaults having a particularly complex geometry, are illustrated to show the effectiveness and robustness of the TNA in assessing the safety conditions of existing masonry vaults or in designing new ones.

Tutti gli interessati sono invitati a partecipare.

Il seminario è organizzato dal gruppo di Scienza delle Costruzioni (D. Bigoni, L. Deseri, N.Pugno, A. Piccolroaz, F. Dal Corso, M.F. Pantano, R. Springhetti, D. Misseroni)



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