



UNIVERSITÀ DI PISA

SCUOLA DI DOTTORATO IN INGEGNERIA “Leonardo da Vinci”

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Sede amministrativa presso il Dipartimento di Ingegneria Aerospaziale

A V V I S O D I S E M I N A R I O

Nell’ambito del ciclo di seminari “*Between Mechanics and Architecture*”,
promosso dalla *Scuola di Dottorato in Ingegneria “Leonardo da Vinci”* d’intesa con il
Dottorato internazionale in Ingegneria Civile e Ambientale con sede amministrativa in
Firenze e sedi consorziate Pisa e Perugia,

Antonio TRALLI

Professore Ordinario di Scienza delle Costruzioni (Università di Ferrara)

lunedì 9 marzo alle ore 16 terrà un seminario dal titolo

Equilibrium and Collapse of Masonry Vaults

Summary. By starting from a brief historical introduction on masonry arches, the lecture aims at offering a critical review of some methods now available in the technical literature and commonly used in the analysis of masonry vaults up to their collapse, by highlighting advantages and drawbacks of each approach. Classic no-tension material models disregard the small existing tensile strength and make the assumption of infinitely elastic behavior in compression and isotropy, giving thus the possibility to deal with either semi-analytical approaches (especially for arches) or robust numerical procedures. More advanced but rather complex models are nowadays able to deal also with anisotropy induced by texture, small tensile strength and softening in tension, as well as by finite strength in compression. Traditionally Limit Analysis has proved to be the most effective Method for a fast and reliable evaluation of the load bearing capacity of vaulted masonry structures. The so-called Thrust Network Method moves its steps from lower bound theorems, whereas FE limit analysis approaches with infinitely resistant elements and dissipation on interfaces take inspiration from the upper bound point of view. An alternative to Limit Analysis is represented by traditional FEM combined with either elastic-plastic or damaging models with softening, commonly used for other materials but recently adapted also to masonry.

Il seminario, della durata di circa 2 ore, sarà tenuto nella sala riunioni della sede di Ingegneria Strutturale (DICI)

Referenti dell’invito: Stefano Bennati & Walter Salvatore

Pisa, 2 marzo 2015.

Il Direttore della Scuola
(Prof. Ing. Stefano Bennati)