



UNIVERSITÀ DI PISA

SCUOLA DI DOTTORATO IN INGEGNERIA "Leonardo da Vinci"

Stefano BENNATI (Direttore)

Sede amministrativa presso il Dipartimento di Ingegneria Civile e Industriale (DICI)

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AVVISO DI SEMINARIO

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*,

Santiago HUERTA

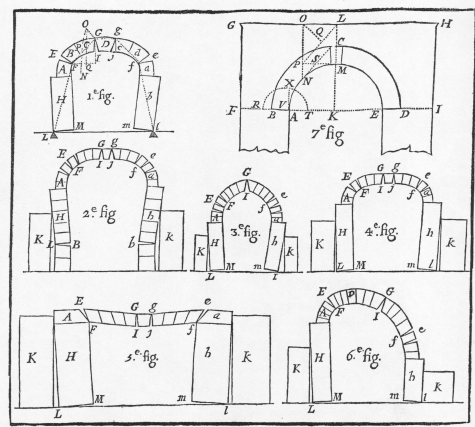
Professor of Structural Design (Universidad Politecnica de Madrid)

martedì 14 aprile alle ore 16 terrà un seminario dal titolo

Arches, vaults and buttresses

Summary. Masonry structures are completely different from modern structures. They consist of stones or bricks bound together by some weak mortar layers. They are usually cracked and supported on foundations whose exact shape and mechanical properties are frequently unknown. The set of equilibrium, constitutive and compatibility equations should always cope with this. The

most adequate frame is that of modern limit analysis of masonry structures, as formulated by Heyman since the 1960's. Provided that the material follows some assumptions (good compressive strength, no tensile strength, sliding impossible), the Fundamental Theorems apply. Within the safe Theorem frame it is possible to analyze and ascertain the safety of any masonry structure, however complex by means of equilibrium. The analyst needs a good knowledge of historic constructions and insight into masonry behavior, but the problem is essentially geometrical: a correct geometry guarantees the safety. Old master builders knew this, and deduced geometrical rules. By the modern way of limit analysis we arrive to the same geometric conclusions. First, arches will be studied in detail: equilibrium and collapse; safety; then, domes and eventually whole cathedrals.



Il seminario, della durata di circa 2 ore, sarà tenuto nell'Aula Pacinotti

Referenti dell'invito: Stefano Bennati, Riccardo Barsotti

Pisa, 7 aprile 2015.

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