



Escola Politècnica Superior
d'Edificació de Barcelona

UNIVERSITAT POLITÈCNICA DE CATALUNYA

L'Institut d'Estadística i Matemàtica Aplicada a l'Edificació (IEMAE) recull propostes en el sector de l'edificació sostenible de professors de diferents departaments de l'EPSEB de forma transversal i en aquest context dinamitza i dóna suport a l'activitat dels seus membres en l'àrea de l'Estadística i Matemàtica Aplicada orientades a noves metodologies i les seves aplicacions.

Més informació:

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Seminari IEMAE

23 de setembre de 2010

12h, Aula 0.8, EPSEB

Calendari 2010

- 21/07/2010: *Técnicas operativas de gestión fuzzy aplicadas a la gestión empresarial.* Jordi Bachs Ferrer. Dept. Economia i Organització d'Empreses, UB.
- 21/07/2010: *On the use of Probabilistic Algorithms in Combinatorial Optimization.* Dragos Ionescu. MIT student, Boston, USA.
- **23/09/2010: Shelters on archaeological areas: mathematical models to support the design.** **Elisabetta Rosina. BEST, Politecnico di Milano.**
- 06/10/2010: *Accuracy issues associated with optimisation-based mining of a "tobacco control" data set.* Zari Dzalilov. University of Ballarat. Australia.
- 18/10/2010: *János D. Pintér.* Ozyegin University, Istanbul, Turkey.
- 28/10/2010: *Escher i les architectures impossibles.* Eva Miranda. Dept. Matemàtica Aplicada I, UPC.
- 17/11/2008: *Chara Pantazi.* Dept. Matemàtica Aplicada I, UPC.
- 15/12/2010: *Reliability and Redundancy Analysis of Structural Systems with Application to Highway Bridges.* Michel Ghosn. Dept. Civil Engineering, The City College of New York.
- 21/12/2010: *Mètodes probabilístics en fiabilitat estructural: Teoria i Aplicacions.* Juan Àguila, estudiant a l'EPSEB, UPC.

SHELTERS ON ARCHAEOLOGICAL AREAS: MATHEMATICAL MODELS TO SUPPORT THE DESIGN

*Elisabetta Rosina
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Abstract

To overcome the limitations of traditional covering systems, a project for the creation of new shelters has to combine all current preservation requirements, along with new issues such as, flexibility, feasibility, low maintenance requirements, ease of disassembly and reusability.

The topic of the lecture is the protection of archaeological sites, it will detail the author's research activity and two pilot projects undertaken in Sardinia (Italy). Several technical aspects are analysed, highlighting solutions which could contribute to damage rather than serve to protect. The first study case presents the innovative procedure for monitoring the environmental (RU, T, solar irradiation, wind speed and direction) conditions and their variations in the volume underneath a provisional shelter, to study the effects on the ruins, in order to define the requirements for the projects of the new shelter. The second study cases, in addition of the presented procedure, shows the results of measuring the wind speed and direction in order to simulate the ventilation of the site underneath the shelter. The scope of the job is to provide a scientific consulting for the project of the new shelter. For that the numerical analysis was applied to bidimensional and tridimensional models CFD of the archaeological site of San Saturnino Church in Cagliari.