

**DIPARTIMENTO DI INGEGNERIA CIVILE, AMBIENTALE E ARCHITETTURA
UNIVERSITÀ DEGLI STUDI DI CAGLIARI**

**PROGRAMMA VISTING PROFESSOR
REGIONE AUTONOMA DELLA SARDEGNA**

PROF. PILATE MOYO

**Associate Professor
Department of Civil Engineering
Faculty of Engineering and the Built Environment
University of Cape Town**

29 giugno 2012, ore 10.00, locali ex Dip. Ingegneria Strutturale

Ambient vibration testing of concrete arch dams

Structural performance assessment of dams requires a representative structural model. Dynamic testing can offer the vital link between the as built structural system and the theoretical finite element models via dynamic properties such as natural frequencies and mode shapes. Ambient vibration testing (operational modal analysis) lends itself well to dynamic testing of large civil structures such as dams. In ambient vibration testing, dynamic properties are measured under a structure's operating conditions. This eliminates the need for heavy and expensive equipment which is required in forced vibration testing. A survey of the application of ambient vibration testing of dams in technical literature shows limited use of ambient vibration testing techniques in dams. The seminar will give a brief summary of application of ambient vibration testing to dams. Ambient vibration tests of two dams will be reported.

2 luglio 2012, ore 10.00, locali ex Dip. Ingegneria Strutturale

Durability of concrete structures: The South African Approach

Durability design of reinforced concrete (RC) structures in adverse environments is concerned with ensuring the ability of the concrete to resist the penetration of aggressive agents during its intended service life. This largely involves controlling the quality and thickness of the cover layer protecting the reinforcement. In South Africa (SA), durability indexes (DI's) have been adopted as engineering measures of the potential resistance of concrete cover to the transport mechanisms of gaseous diffusion, water absorption and chloride diffusion. The DI's are derived from three tests; the chloride conductivity test, where chloride ion resistance is important, the oxygen permeability test to establish carbonation resistance, and a sorptivity test to examine concrete for water absorption. The seminar will provide an overview of these tests.