

IV Workshop on New Boundaries of Structural Concrete

Sept. 29 – Oct. 1 2016

Anacapri, Italy

Organized by

ACI Italy Chapter



Department of Structures for
Engineering and Architecture
University of Naples Federico II



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Program

September 29th, Thursday

13:30-14:30 Registration

14:30-15:00 Welcome

15:00-17:00 Session C “New scenarios for concrete”

Chairman: Prof. Pietro Gambarova, Politecnico di Milano

ID 4 Mechanical performance of sulpho-based rapid hardening concrete

D. Sirtoli, P. Riva, S. Tortelli, M. Marchi

ID 10 Moon exploration habitats using in-situ sulfur concrete

V. Sumini, C. Chesì

ID 11 Design of steel-free pre-stressed reinforced concrete slabs: theory and experimentation

B. Dal Lago, L. Ferrara, S. Taylor, M. Sonebi, P. Deegan, G. Kelly, A. Pattarini

ID 16 Recycling of clay sediments for geopolymer concrete production

F. Messina, C. Ferone, B. Molino, F. Colangelo, R. Cioffi

ID 29 Smart cement-based nanocomposites for non destructive testing of concrete structures

A. D'Alessandro, F. Ubertini, A. L. Materazzi

ID 30 Development and use of foamed recycled fibers to control shrinkage cracking of cementitious mortars

B. Coppola, L. Di Maio, L. Courard, P. Scarfato, L. Incarnato

ID 55 Experimental evaluation of the performances of cement based plasters manufactured by using phase change materials

L. Coppola, D. Coffetti, S. Lorenzi

16:45-17:15 Coffee break

17:15-18:45 Session E “Innovative strengthening systems for concrete structures”- part 1

Chairman: Prof. Ciro Faella, University of Salerno

ID 3 Study of high-temperature effects on the FRCM mechanical properties

J. Donnini, F. De Caso y Basalo, V. Corinaldesi, A. Nanni

ID 8 Thin Concrete Shells. Repairing and maintenance strategies

F. Albani, C. Dusi

ID 22 Geopolymer-based system to retrofit rc beams with novel Inhibiting-Repairing-Strengthening (IRS) technique

F. Bencardino, A. Condello

ID 25 An investigation of the debonding mechanism in steel FRP- and FRCM-concrete joints

M. Santandrea, A. O. Imobamed, H. Jabangir, C. Carloni, C. Mazzotti, S. De Miranda, F. Ubertini, P. Casadei

ID 40 Bond behaviour of SRP/SRG systems on concrete substrate: experimental investigation

R. Realfonzo, A. Napoli, F. Ascione, M. Lamberti

ID 53 Experimental program at ambient and elevated temperature of RC beams strengthened with NSM FRP bars bonded with cementitious grout

I. Del Prete, A. Bilotta, L. Bisby, E. Nigro

September 30th, Friday

09:00-09:30 Registration

09:30-10:15 Keynote Lecture “Analysis of structural effects of time-dependent behaviour of concrete: an internationally harmonized format”

Prof. Mario Chiorino, Politecnico di Torino

10:15-11:15 Session B “Controlled-performance concrete”

Chairman: Prof.ssa Maria Rosaria Pecce, University of Sannio

ID 7 Study of early age behavior of fiber-reinforced cement-based materials containing expansive agent

A. Nardinocchi, V. Corinaldesi, A. Palmeri

ID 15 Durability of electric arc furnace slag concrete

F. Faleschini, M. A. Zanini, P. Bragolusi, C. Pellegrino

ID 23 Actual problems of structural concrete durability

V. Falikman, V. Stepanova

ID 46 Experimental results on staggered lapped bars in FRC

G. Metelli, E. Marchina, G. A. Plizzari

11:15-11:45 Coffee break

11:45-13:45 Session F “SUPERCONCRETE Project”

Chairman: Prof. Vyatcheslav Falikman, Moscow State University

ID 18 Modelling mineral foam morphology dynamics for stability and insulation properties

A. Gilka-Bötzow, N. Ukrainczyk, E. A. B. Koeders

ID 20 Meso-scale simulation of the post-cracking behaviour of hybrid industrial/recycled steel fibre-reinforced concrete

A. Caggiano, D. Said Schicchi, E. Martinelli, G. Etse

ID 24 The incidence of concrete quality on buckling analysis of slender columns

L. Vistos, A. Caggiano, E. Martinelli, P. Folino

ID 32 Bond-slip laws for natural fibers in high performance cementitious matrices

S. Rocha Ferreira, M. Pepe, E. Martinelli, F. de Andrade Silva, R. Toledo Filho

ID 33 Flexural behavior of RC beams made from normal and high-strength recycled aggregate concrete

C. Santana Rangel, M. Amario, M. Pepe, E. Martinelli, R.D. Toledo Filho

ID 56 Analyzing the practice of economic and environmental evaluation of structural concrete

V. Garcia, D. Garcia, J.T. San-Josè, J.S. Dolado

ID 57 A viscoelastic theory based creep model for high class concrete

B. Meng, Z. Liu, W. Hansen, E. A. B. Koenders

ID 35 Experimental and theoretical study on the rheological behavior of Recycled Aggregate Concrete

M. Pepe, E. Martinelli, C. Faella, R. Toledo Filho

13:45-14:45 Lunch

14:45-16:00 Session D “Concrete quality control on site”

Chairman: Prof. Luigi Coppola, University of Bergamo

ID 5 Factors affecting mechanical strength of concrete cores: an investigation concerning public buildings located in Toscana

M. T. Cristofaro, A. D’Ambrisi, M. De Stefano, R. Nudo, R. Pucinotti, M. Tanganelli

ID 6 Development of innovative quality detection platform for reinforced concrete school buildings: an App for large scale supervising

V. Sangiorgio, G. Uva, F. Fatiguso

ID 28 Evaluation and acceptance of concrete quality by in-place testing

G. Uva, F. Porco, A. Fiore

ID 31 Influence of materials mechanical properties for the RC buildings assessment

G. Uva, D. Raffaele, S. Ruggieri

ID 49 Influence of mixing time on the mechanical properties of Self Compacting Concrete

G. Brandonisio, G. Mautone, R. Realfonzo, A. De Luca

16:00-16:30 Coffee break

16:30-18:00 Session A “Performance and life-cycle costs of new concrete structures”

Chairman: Prof. Will Hansen, University of Michigan

ID 1 Effects of chloride-induced corrosion on structural reliability of R.C. structures

P. Castaldo, B. Palazzo, A. Mariniello

ID 13 Sustainable cement-based materials with fine EAF slag aggregates

F. Faleschini, A. Santamaria, C. Pellegrino, J.J. Gonzalez

ID 19 Testing and modelling indirectly-supported one-way R/C slabs without shear reinforcement

P.G. Gambarova, F. Lo Monte, R. Visentini, M. Zecchillo

ID 21 Experimental evaluation of corrosion effects on lateral strength of hollow bridge piers

A.Bossio, P. Cassese, G. P. Lignola

ID 34 A numerical study on the residual behaviour of prestressed concrete members exposed to natural fires

N. Kalaba, P. Bamonte

ID 38 In-plane deformability of RC floors with EPS lighthening elements

M. R. Pecce, F. Ceroni, G. Maddaloni, V. Iannuzzella

18:00-18:30 ACI IC Members' Meeting

18:30-19:30 ACI IC Board Meeting

21:00 Gala Dinner

*Hotel San Michele, Via Giuseppe Orlandi, 5
80071 Anacapri Napoli, Italy*

October 1st, Saturday

09:30-10:00 Registration

10:00-10:45 Keynote Lecture “Rieti Earthquake - Preliminary remarks on the ground motion data and structural behaviour”

Prof. Edoardo Cosenza, University of Naples Federico II

10:45-11:15 Coffee break

11:15-13:15 Session E “Innovative strengthening systems for concrete structures”- part 2

Chairman: Prof. Carlo Pellegrino, University of Padova

ID 12 Experimental response of CFRP strengthened RC columns governed by shear failure

M. Del Zoppo, M. Di Ludovico, A. Balsamo, A. Prota

ID 17 Geopolymer mortars for strengthening existing reinforced concrete structures

L. Carabba, M. Santandrea, S. Manzi, C. Carloni, M. C. Bignozzi

ID 26 Comparison of flat slab strengthening techniques against punching-shear

M. Lapi, D. Martini, E. Zagli, M. Orlando, A. Ramos, P. Spinelli

ID 41 Strengthening of RC beam-column joints with SRP/SRG systems

A. Napoli, C. Faella, F. Perri, R. Realfonzo

ID 43 Role of beam-column joints in the seismic response of non-conforming RC frames

M. T. De Risi, P. Ricci, G. M. Verderame

ID 47 An optimal strategy for seismic retrofitting of RC frames

R. Falcone, C. Faella, C. Lima, E. Martinelli

ID 50 Strengthening of historical r.c. columns of the Hennebique system

G. Brandonisio, G. Mantone, A. Rizzi, A. De Luca

ID 52 Effectiveness of cementitious matrices in NSM FRP for strengthening of concrete structures

I. Del Prete, A. Bilotta, D. Di Fiore, E. Nigro

13:15-13:45 Concluding remarks