



PROGRAM

ACI-NBSC 2024

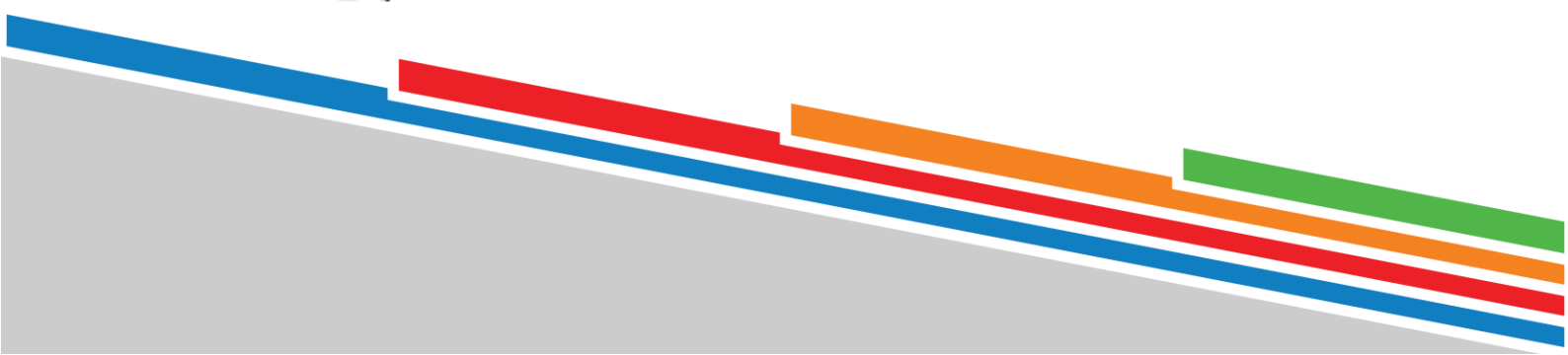
The New Boundaries of Structural Concrete

Rome (Italy), September 19th-20th, 2024

Organized by

American Concrete Institute – Italy Chapter

University of Rome Tor Vergata – Department of Civil
Engineering and Computer Science Engineering (DICII)
– Tunnelling Engineering Research Centre (TERC)





The New Boundaries of Structural Concrete (NBSC)

Rome (Italy), September 19th-20th, 2024

ORGANIZED BY:

American Concrete Institute Italy Chapter

Department of Civil Engineering and Computer Science
Engineering of University of Rome Tor Vergata

ORGANIZING COMMITTEE:

UNIVERSITY OF ROME TOR VERGATA

Alberto Meda (Chair)

Zila Rinaldi

Simone Spagnuolo

Fabio Di Carlo

Teresa Celozzi

ACI ITALY CHAPTER

Mario Alberto Chiorino (Honorary President)

Luigi Coppola (President)

Liberato Ferrara (Vice-President)

Roberto Realfonzo (Past President)

WORKSHOP TOPICS:

Innovative cementitious materials.

Corrosion and self-healing in reinforced concrete (RC) structures

Concrete and reinforced-concrete under extreme environmental conditions (earthquake, wind, temperature)
Concrete and reinforced concrete in accidental conditions (fire, impact, blast)

Green concrete and sustainability of concrete structures

Short- and long-term behaviour of RC structures

Bond and connections in RC, prestressed concretes (PC) and mixed structures

Strengthening and repair of concrete structures

Performance and life-cycle assessment (LCA) of concrete structures

Aging and deterioration of Concrete Structures

Structural health monitoring

SCIENTIFIC COMMITTEE:

Maria Antonietta Aiello (Italy)

Maria Cruz Alonso (Spain)

Carmen Andrade Perdriz (Spain)

Luigi Biolzi (Italy)

Denny Coffetti (Italy)

Valeria Corinaldesi (Italy)

Edoardo Cosenza (Italy)

Marco Di Prisco (Italy)

Rolf Eligehausen (Germany)

Ciro Faella (Italy)

Vyatcheslav Falikman (Russia)

Alessandro Fantilli (Italy)

Pietro Gambarova (Italy)

Matteo Gastaldi (Italy)

Ravindra Gettu (India)

Ezio Giuriani (Italy)

Maurizio Guadagnini (UK)

Eduardus Koenders (Germany)

Lidia La Mendola (Italy)

Marianovella Leone (Italy)

Antonio Liciulli (Italy)

Gennaro Magliulo (Italy)

Enzo Martinelli (Italy)

Stijn Matthys (Belgium)

Viktor Mechtcherine (Germany)

Marco Menegotto (Italy)

Francesco Micelli (Italy)

Barzin Mobasher (Usa)

Harald Müller (Germany)

Antonio Nanni (Usa)

Emidio Nigro (Italy)

Maria Rosaria Pecce (Italy)

Alva Peled (Israel)

Carlo Pellegrino (Italy)

Giovanni Plizzari (Italy)

Andrea Prota (Italy)

Paolo Riva (Italy)

Gianpaolo Rosati (Italy)

Anna Saetta (Italy)

Marco Savoia (Italy)

Pedro Serna (Spain)

Lesley Sneed (USA)

Timothy Wangler (Switzerland)



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19th-20th September 2024, Rome, Italy



The New Boundaries of Structural Concrete (NBSC)

CONTACTS

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Website

<http://www.aciitaly.com/events/nbsc2024/>

VENUE

School of Engineering
Via del Politecnico n.1 – 00133 ROME (RM)



HOW TO REACH THE VENUE



Arriving by the airport

Rome Fiumicino (International airport)

80 min with public transportation (€ 18)

35 min with taxi

Rome Ciampino (Low cost flight)

40 min with public transportation (€ 3)

15 min with taxi



Arriving by the Subway (€ 1.50)

Line "A" from Termini station to Anagnina station

→ Bus n.20 express from Anagnina st. (get off at Via Cambridge stop);

→ Bus n. 500 from the Anagnina st.;

→ Bus line Ciampino railway station - Tor Vergata University



WHERE TO STAY

Inside the University Campus



If you want to stay next to the NBSC Workshop site:

We recommend:

- Campus X (link [CX Rome | Tor Vergata | Campus \(cx-place.com\)](#)), with very low prices (approx. 15 min on foot from Workshop venue);
- Hotel Roma Tor Vergata (link [Hotel Roma Tor Vergata, Rome | Benvenuti al Sito Ufficiale](#)) (approx. 20 min on foot from Workshop venue).


City center of Rome



If you want to stay in the city center of Rome, we suggest the Hotel Archimede ([Hotel Archimede ★★★★★ - Il tuo Hotel nel Cuore di Roma \(archimedehotelroma.it\)](#)) affiliated with University of Rome Tor Vergata (approx. 60 min on Metro line + bus from Workshop venue).

In order to make your trip more fluid we recommend the hotels near the stations of the Metro Line A (approx. 50 minutes, Bus n. 20 express from “Anagnina” station, get off at “Via Cambridge” stop) or Metro Line C.

WORKSHOP PROGRAM

From	To	Day 1 (Thursday, 19 th)	From	To	Day 2 (Friday, 20 th)
08:00	09:00	Registration	08:30	09:00	Registration
09:00	09:15	Opening Ceremony NBSC2024 (Welcome by Prof. Luigi Coppola, Prof. Renato Baciocchi, Prof. Alberto Meda)	09:00	09:30	Keynote (Prof. Fabio Maria Bolzoni)
09:15	09:45	Keynote (Prof. Tullia Iori)	09:30	10:45	Session 5
09:45	10:45	Session 1	10:45	11:15	Coffee break
10:45	11:15	Coffee break	11:15	12:15	Session 6
11:15	12:45	Session 2	12:15	13:15	PhD awards (Prof. Pietro G. Gambarova)
12:45	13:45	Lunch	13:15	13:45	Bertolini Memorial awards (Prof. Maddalena Carsana)
13:45	14:15	Keynote (Prof. Antonio Grimaldi)	13:45	14:00	Closing Workshop
14:15	16:15	Session 3	14:00	15:00	Lunch
16:15	16:45	Coffee break	<p>AWARDING SPONSOR</p> 		
16:45	19:00	Session 4			
19:30	23:30	Social Dinner (Villa Mondragone)			

DAY 1 (19th Sept) LEONARDO ROOM	
09:00 – 09:15	OPENING CEREMONY NBSC2024 <i>chaired by Alberto Meda, conference chairperson, Luigi Coppola, ACI Italy Chapter President, Renato Baciocchi, Head of Department of Civil Engineering and Computer Science Engineering of University of Rome Tor Vergata</i>
09:15 – 09:45	Keynote – Tullia Iori Ingegneria tra storia e futuro
SESSION 1 (09:45 – 10:45)	STRUCTURAL HEALTH MONITORING Chairs: Alberto Meda, Annalisa Napoli
09:45 – 10:00	Manini Connect: integrated continuous monitoring of precast structures subject to multiple hazards <i>Manuel Boccolini Leonardo Casali Salvatore Romano Giuseppe Paci Arianna Peppoloni Bruno Dal Lago</i>
10:00 – 10:15	Reinforced concrete bridge serviceability displacement estimation for DInSAR data interpretation <i>A. Sandoli S. Scoccola C. Ranieri G. Fabbrocino</i>
10:15 – 10:30	Integrated System for monitoring and management of Infrastructures <i>Antonino Fotia Raffaele Pucinotti</i>
10:30 – 10:45	Evaluation of Bridge deflections by means of Clinometers based on Micro-Electro-Mechanical Systems (MEMS) <i>Francesco Filippo Bico Fabio Di Carlo Alberto Meda</i>
10:45 – 11:15	Coffee break
SESSION 2 (11:15 – 12:45)	STRENGTHENING AND REPAIR OF CONCRETE/MASONRY STRUCTURES Chairs: Jacopo Donnini, Francesco Bencardino
11:15 – 11:30	Eco-Friendly Alkali-Activated Mortars for Structural Applications <i>Francesco Ascione Francesco Bencardino Sebastiano Candamano Fortunato Crea Pietro Mazzuca Annalisa Napoli Luciano Ombres Roberto Realfonzo</i>
11:30 – 11:45	Interface bond between SRP system and concrete substrate: modelling <i>Francesco Ascione Marco Lamberti Annalisa Napoli Roberto Realfonzo</i>
11:45 – 12:00	Influence of high temperature exposure on the performances of Textile Reinforced Alkali-Activated Mortar systems <i>Daniele Berdini Jacopo Donnini</i>
12:00 – 12:15	Strengthening of Varese-type floor <i>Marco Bosio Marius Eteme Minkada Paolo Riva Andrea Bruggi</i>
12:15 – 12:30	The effectiveness of Fiber Reinforced Concrete in shear retrofitting of bridge concrete beams: case study and numerical simulation <i>A. Greco S. Pistorio A. Salvatore A. Ficociello A. Basconi A. Lupoi</i>
12:30 – 12:45	Assessment of Mid-Span Deflection in Beams Reinforced with Hybrid FRP/Steel Rebars: A Comparative Study <i>Luciano Ombres Maria Antonietta Aiello Pietro Mazzuca Francesco Campolongo</i>
12:45 – 13:45	Lunch

DAY 1 (19th Sept) LEONARDO ROOM	
13:45 – 14:15	Keynote – Antonio Grimaldi Seismic vulnerability of concrete/masonry structures: between theory and design
SESSION 3 (14:15 – 16:15)	PERFORMANCE AND LCA OF CONCRETE STRUCTURES GREEN CONCRETE AND SUSTAINABILITY OF CONCRETE STRUCTURES Chairs: Simone Spagnuolo, Maria Novella Leone
14:15 – 14:30	How life cycle assessment has influenced our mindset in structural designing. <i>Francesco Lomurno Mauro Eugenio Giuliani</i>
14:30 – 14:45	Comprehensive environmental comparison of different structural systems for multistorey buildings in Italian and French contexts <i>Laura Corti Manuel Manthey Pierre Navaro-Auburtin Giovanni Muciaccia</i>
14:45 – 15:00	Design and feasibility of sustainable solution for the Genoa Sub-Port Tunnel Project <i>Simone Spagnuolo Francesca Magnelli Matteo Pierani Andrea Magliocchetti Alberto Meda</i>
15:00 – 15:15	Bond behaviour between steel/FRP bars and sustainable concrete: preliminary study <i>Maria Antonietta Aiello Denny Coffetti Luigi Coppola Maria Milena Della Vecchia Maria Novella Leone Annalisa Napoli Simone Rapelli Roberto Realfonzo Vincenzo Romanazzi</i>
15:15 – 15:30	Properties of high-performance fiber reinforced concrete containing electric arc furnace slags (EAFS) <i>Matteo Lamberti Roberto Rosignoli Marco Stancari Fausto Minelli</i>
15:30 – 15:45	Evaluation of the Italian ready-mix concrete supply chain based on LCA “from cradle to gate” <i>Denny Coffetti Elisabetta Palumbo Simone Rapelli Elena Crotti Luigi Coppola</i>
15:45 – 16:00	Applicability of an accelerated test for long-term performance estimation of hydrophobic treatment for reinforced concrete structures <i>Britta M. Schallock Matteo Gastaldi</i>
16:00 – 16:15	Bond behaviour of FRP bars to concrete: database collection and preliminary analysis <i>Maria Milena Della Vecchia Annalisa Napoli Roberto Realfonzo</i>
16:15 – 16:45	Coffee break

DAY 1 (19th Sept) LEONARDO ROOM	
SESSION 4 (16:45 – 19:00)	CONCRETE AND REINFORCED CONCRETE IN ACCIDENTAL (Fire, Impact, Blast) AND UNDER EXTREME ENVIRONMENTAL CONDITIONS (Earthquake, Wind, Temperature) Chairs: Paolo Castaldo, Fabio Di Carlo
16:45 – 17:00	Thermo-fluid-dynamic simulation of cellulosic fires in precast industrial buildings with vault or shed roof <i>Bruno Dal Lago Francesco Rizzo Paride Tucci</i>
17:00 – 17:15	Structural behaviour of reinforced concrete ring tunnels in fire <i>Bruno Dal Lago Gaia Casarotto</i>
17:15 – 17:30	Structural robustness of reinforced concrete moment resisting frames: deterministic and reliability assessment <i>Elena Miceli Diego Gino Gabriele Neri Gaetano Alfano Luca Giordano Paolo Castaldo</i>
17:30 – 17:45	Bond of Embedded Steel Reinforcement at High Temperature and in Fire Conditions <i>Pietro G. Gambarova Giovanni Metelli Giovanni Muciaccia Giovanni Plizzari</i>
17:45 – 18:00	Distributed plasticity models for the seismic response of RC shear walls <i>Chiara Di Salvatore Gennaro Magliulo Danilo D'Angela Claudio Corbo</i>
18:00 – 18:15	Machine-learning-enhanced variable-angle truss model for shear capacity assessment of reinforced concrete elements <i>Qingcong Zeng Dario De Domenico Giuseppe Quaranta Giorgio Monti</i>
18:15 – 18:30	A new numerical model to simulate buckling of rebars <i>Melina Bosco Andrea Floridia Dario Panarelli Pier Paolo Rossi Nino Spinella</i>
18:30 – 18:45	Seismic Hysteretic Systems for Precast Buildings <i>Giulio Proietti Simone Pedullà Nicola Nisticò</i>
18:45 – 19:00	Structural Assessment and Maintenance Optimization with Satellite Radar Imagery and Data Integration <i>Teresa Celozzi Fabio Di Carlo Alberto Meda</i>
19:30 – 23:30	Social Dinner. Trasfer from University to "Villa Mondragone"
23:30	Transfer from "Villa Mondragone" to Rome Centre

DAY 2 (20th Sept)	LEONARDO ROOM
09:00 – 09:30	Keynote – Fabio Maria Bolzoni Big milestones in the study of steel corrosion in concrete
SESSION 5 (09:30 – 10:45)	CHAIRS: Roberto Realfonzo, Denny Coffetti
09:30 – 09:45	Experimental study of smart cementitious material to monitor deformation and cracking in structures. <i>Marcello Molfetta</i>
09:45 – 10:00	Smart cement-based mortars for structural health monitoring applications: a step towards increased scalability <i>Antonella D'Alessandro Daniel A. Triana-Camacho Andrea Meoni Enrique García-Macías Filippo Ubertini</i>
10:00 – 10:15	Self-cleaning low-carbon mortars based on alkali-activated materials: the role of TiO ₂ addition. <i>Simone Rapelli Denny Coffetti Elena Crotti Luigi Coppola</i>
10:15 – 10:30	Electrically conductive mortars based on cement or alkali-activated fly ash: mechanical and electrical characterization <i>Alessandra Mobili Gloria Cosoli Gian Marco Revel Francesca Tittarelli</i>
10:30 - 10:45	Structural behavior of HPFRC walls subjected to axial load and bending moment <i>Alessandro P. Fantilli Nicholas S. Burello Bernardino Chiaia Jorge C. Diaz Garcia Alfredo A. Flore Gutierrez Davide Zampini</i>
10:45-11:15	Coffee break
SESSION 6 (11:15 – 12:15)	AGING AND DETERIORATION OF CONCRETE STRUCTURES Chair: Zila Rinaldi, Stefania Imperatore
11:15 – 11:30	Automatic crack pattern detection and assessment of corroded reinforced concrete structures <i>Stefania Imperatore Cristina Martellini Cristina Monteleone Tiziano Pagliaroli Fabrizio Patané Annalaura Casanova Muncchia</i>
11:30 – 11:45	The effect of degradation on the structural response of a reinforced concrete arch bridge <i>Paolo Andrea Miglietta Gianni Blasi Daniele Perrone Francesco Micelli Maria Antonietta Aiello</i>
11:45 – 12:00	On field evaluation and durability of protective silane-based treatments for concrete structures <i>Denny Coffetti Simone Rapelli Andrea Nicoletti Luigi Coppola</i>
12:00 – 12:15	Experimental study for the development of constitutive laws of corroded steel rebars <i>Manuel Bartoli Paolo Isabella</i>
12:15 – 13:15	PHD AWARD FEDERBETON ACI-IC Chair: Pietro G. Gambarova Opening words: Nicola Zampella
13:15 – 13:45	BERTOLINI MEMORIAL AWARD Chair: Maddalena Carsana Prof. Luca Bertolini Memorial: Federica Lollini
13:45 – 14:00	CLOSING CEREMONY NBSC2024
14:00 – 15:00	Lunch

SOCIAL DINNER LOCATION

Villa Mondragone
Via Frascati, 51, 00040 Monte Porzio Catone RM



The construction works, which included the expansion of the pre-existing Villa Vecchia, began in 1567 at the behest of Cardinal Marco Sittico Altemps, who commissioned the project to Martino Longhi the Elder, on the structures of an ancient Roman villa that belonged to the Quintili consuls. Later Martino Longhi was joined by Jacopo Barozzi da Vignola who took care of the entire restoration until its completion. The work was completed in 1573, immediately after Cardinal Ugo Boncompagni took office who, having become Pope Gregory XIII, used the villa regularly as a residence. Here in 1582 he promulgated the papal bull *Inter gravissimas*, which initiated the reform of the calendar in use today. From the frequent use as a decorative element of the heraldic coat of arms of the Boncompagni family, depicting a dragon, the villa took the name of Mondragone.

Villa Mondragone had its maximum splendor during the era of the Borghese family, with Cardinal Scipione Borghese and Pope Paul V.

Popes such as Clement VIII and Paul V were guests of this villa.

From 1626 Pope Urban VIII decided to leave Villa Mondragone in favor of the papal residence of Castel Gandolfo. In 1858 the writer George Sand was a guest of the villa, finding a special setting that she reported in her novel *La Daniella*. In 1865 the villa was donated to the Jesuits by Prince Marcantonio V Borghese, becoming the foreign seat of the Ghislieri College and later the Mondragone College was inaugurated, a boarding school for the children of the higher social classes.

In 1912 W.M. Voynich bought the famous Voynich Manuscript here from the Jesuits. During World War II, the college was transformed into a shelter for displaced people, and in 1953 the Jesuit College was closed.

In 1981 the Villa was sold by the Jesuits to the University of Rome Tor Vergata.

THE GOLDEN ERA CONCERT

Villa Mondragone
Via Frascati, 51, 00040 Monte Porzio Catone RM



M^o Urso, clarinetista, batterista e direttore d'orchestra di fama internazionale, soprannominato dai media e dai suoi colleghi "The King of Swing".

Il nome del progetto è "The Golden Era", nello specifico un concerto-spettacolo all'insegna del Jazz americano più autentico. Il progetto è un tributo alla genialità di due figure cardine di questo periodo storico, che sono per Emanuele, da sempre fonte di ispirazione:

- Benny Goodman, irripetibile artista che ha portato (insieme ad altri) il Jazz ai massimi livelli qualitativi ed interpretativi oltre ad avere per primo contribuito ad abbattere le forti barriere razziali inserendo musicisti di colore nelle sue formazioni;
- Gene Krupa, che oltre ad avere inventato ed assemblato la batteria moderna, ha nobilitato questo strumento rendendolo principe dell'orchestra, e registrando capolavori come Sing Sing Sing.

Grazie alla straordinaria bravura e genialità del Maestro Urso e dei suoi compagni nel rielaborare e reinterpretare a modo proprio la grande musica americana, tutto questo riprende vita e si trasforma in uno spettacolo unico.

Nella prima parte viene valorizzato principalmente il clarinetto, con il suo suono suadente e grintoso. La seconda parte dello show, vede Emanuele alle prese con le bacchette e i tamburi, ed è il momento in cui egli sarà in grado di incantare ancora di più con una dose inebriante di energia e vitalità.

BUS TRANSFER SERVICE



19:30 → From University (Viale Cambridge) to Villa Mondragone

23:30 → From Villa Mondragone to Rome Centre



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19th-20th September 2024, Rome, Italy



TOR VERGATA
UNIVERSITÀ DEGLI STUDI DI ROMA

ACI ITALY CHAPTER SUSTAINERS



kerakoll



1563
COLLEGIO DEGLI INGEGNERI
E ARCHITETTI DI MILANO

