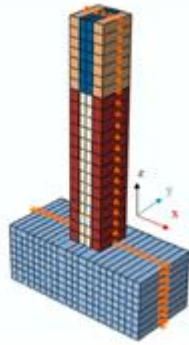
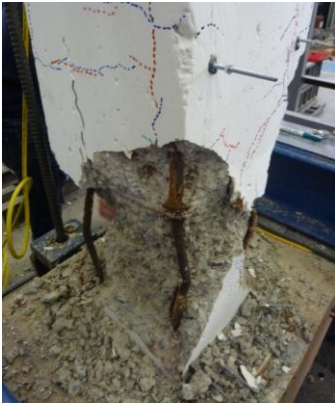


## CALL FOR ABSTRACT

The CACRCS DAY welcome all the contributions related to the behavior of reinforced concrete structures damaged by corrosion both with numerical and experimental approaches.

Papers presented in the CACRCS DAY will be collected in the Proceedings CD-ROM, and will be reviewed and edited afterwards for a book publication with ISBN number and SCOPUS index. Authors willing to present a work at the CACRCS DAY are kindly invited to submit a 300 words abstract in accordance with the themes and topics before March 10, 2019.

Authors are welcome to give an oral presentation at the event.



## REGISTRATION

No registration fee is required.  
For organizational reasons, please register by **March 10th, 2019** by sending an e-mail to **[beatrice.belletti@unipr.it](mailto:beatrice.belletti@unipr.it)**

## CONTACTS

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## ORGANIZING COMMITTEE

Beatrice Belletti – University of Parma  
Matteo Colombo – Polytechnic of Milan  
Marco di Prisco – Polytechnic of Milan  
Mehdi Kashani – University of Southampton  
Gian Piero Lignola – University of Naples Federico II  
Antonino Recupero – University of Messina  
Zila Rinaldi – University of Rome Tor Vergata  
Francesco Tondolo – Polytechnic of Turin  
Francesca Vecchi – University of Parma



UNIVERSITÀ DI PARMA

## INTERNATIONAL CACRCS DAY

### *Capacity Assessment of Corroded Reinforced Concrete Structures*

9:00 – 18:30  
25 March 2019  
Parma, Italy  
Italian Capital of Culture 2020

In collaboration with



Collegio dei Tecnici della Industrializzazione Edilizia

with the support of



Fédération Internationale  
du Béton

Venue:  
S. Elisabetta Conference Center  
Campus- Via delle Scienze, 181, 43124 Parma  
University of Parma  
Italy

## WELCOME TO CACRCS

Structural assessment of existing structures and infrastructures is becoming crucial in many industrialized countries.

Since the great part of existing structures and infrastructures has already reached the service life of 50 years, today is of fundamental importance to assess the actual conditions of the structural element in order to evaluate the remaining service life.

One of the major cause of degradation in reinforced concrete structures is corrosion of steel rebar. Corrosion damage is not always visible to technicians, but nevertheless can lead to structural failure, loss of life, loss of capital investment, and environmental damage. Moreover, corrosion is the main cause of degradation in RC structures in non-exceptional conditions and can have also significant effects on the seismic behavior, leading to dangerous strain localizations and variations of strength distribution and rotation capacity.

A lot of attention has been paid, up to now, to the definition of proper techniques able to prevent or to detect corrosion damage, but very few data are available on the actual capability of numerical and design approach to predict the structural behavior of elements affected by corrosion problems.

This issue is fundamental in order to assess the residual bearing capacity of a damaged structure and to properly select the best strategy of action for the possible renewal of the structures under investigation.

The failure mechanisms of corroded structures, indeed, can be very different from the ones of new or sound construction (buckling of corroded rebar is a typical example) and they are of paramount importance in the evaluation of the structural safety.

For this reason, the theme of the meeting is "Capacity Assessment of Corroded Reinforced Concrete Structures".

In order to assess the prediction capability of numerical and design tools, there is a strong need of reliable experimental benchmark. Because of this, some presentations of this workshop will be also dedicated to interesting experimental investigation not only on material but also on real scale structural elements affected by corrosion.

The CACRCS DAY is dedicated to bringing together all the professionals in the concrete industry and academics from all over the world. It will constitute an excellent forum for engineers, scientists, concrete technologists, researchers, academics and practitioners to exchange knowledge about advances in the field of reinforced concrete structures.



## PRELIMINARY PROGRAM

09:00 *Registration*

*Institutional greetings*, University of Parma

*Opening ceremony*

**Beatrice Belletti**, University of Parma, Italy

*Structural Performance and Seismic Fragility of Corroded RC Structures: Numerical Modelling and Experimental Investigation*

**Mehdi Kashani**, University of Southampton, UK

*Effect of corrosion on cyclic response of concrete columns*

**Camillo Nuti**, University of Roma 3, Italy

*Experimental analysis of RC elements subjected to rebar Corrosion and buckling*

**Zila Rinaldi**, University of Tor Vergata, Italy

*Modelling non-linear behaviour of RC structures including the effect of inelastic buckling and corrosion damage by means PARC\_CL 2.1 Crack Model*

**Francesca Vecchi**, University of Parma, Italy

*A seismic behaviour comparison of corroded structures considering different construction periods*

**Gian Piero Lignola**, University of Naples Federico II, Italy

*Modeling of concrete for nonlinear analysis using Advanced FEA Tool*

**Mauro Parodi**, Exemplar, Italy

*Initial steps of corrosion and oxide characteristics*

**Carmen Andrade**, International Center of Numerical Methods in Engineering, Spain

*First Results of Flexural Tests on Corroded Prestressed Concrete Beams*

**Antonino Recupero**, University of Messina, Italy

*Resistance of corroded RC beams with bond deterioration*

**Dario Coronelli**, Polytechnic of Milan, Italy

*Challenges and uncertainties in application of non-linear analysis for capacity assessment of pretension concrete structures*

**Magda Paciorek**, Oslo Metropolitan University, Norway

*Annone overpass: assessment of reinforcement damage effects on collapse*

**Matteo Colombo**, Polytechnic of Milan, Italy

*Bond between steel and concrete in presence of corrosion*

**Francesco Tondolo**, Polytechnic of Turin, Italy

*Life-Cycle Reliability of Concrete Structures under Corrosion*

**Fabio Biondini**, Polytechnic of Milan, Italy

*Recent experimental investigations on the mechanics of corroded RC members under seismic loading.*

**Alessandro Palermo**, University of Canterbury, New Zealand

*Mechanical behavior of RC members subjected to corrosion: an overview of research projects conducted by IRSN*

**Jacques Jabbour**, Institut de Radioprotection et de Sûreté Nucléaire, France

Coffee break and lunch will be kindly offered by

