

17<sup>th</sup> International SIIV Summer School

5<sup>th</sup> SIIV Arena

# Resilient road infrastructures

Climatic changes and perspective of road infrastructures

San Marino, September 16-20, 2019

**Organized by:**



**In collaboration with:**



UNIVERSITÀ DEGLI STUDI DELLA  
REPUBBLICA DI SAN MARINO  
DIPARTIMENTO DI ECONOMIA,  
SCIENZE E DIRITTO

**Main Sponsor:**



## Contents

In the last decade, extreme natural phenomena have become more and more frequent, entailing a significant impact on social life. Severe natural events such as drier and hotter weather, heavier precipitations, sea level increase and fluctuations, have disrupted or made inaccessible infrastructure networks, increasing repair and management costs. Indeed, the estimation of damage on infrastructures is expected to increase significantly over time, till ten times in sixty years reaching about forty billion euros of expenses in Europe. Therefore, new complex aspects have to be considered in infrastructure design, construction, maintenance and management, shifting from historical climate data to future predictions and involving road authorities, interdisciplinary experts, investment managers, policy makers, stakeholders and suppliers.

Since road infrastructures are the most used communication facilities which drive economy and social needs of every country, this Summer School focuses on new design approaches and synergies for resilient roads, taking into account hazards, exposure and vulnerability of a country to determine risks and responses related to climatic variables and uncertain weather cycles.

Classes deal with the following main topics: climate change and risk mitigation by prediction and preventive measures, geometrical design of road infrastructures considering the effect of climate changes on surrounding areas, stability of road beds and embankments under critical conditions, resilient materials and road pavements, direct and indirect monitoring to adapt the management system to climatic factors not considered in traditional methods.

The Summer School also includes a workshop in collaboration with Misano World Circuit Marco Simoncelli, which hosts the world motorcycle championship (San Marino and Rimini Coast Gran Prix - MotoGP) every September. After a visit to the Misano circuit, the road superficial properties such as adherence, regularity, drainage and high-performance materials will be treated in relation with the specific requirement of a racing pavement.

The 17<sup>th</sup> International SIIV Summer School dedicates a special session to the 5<sup>th</sup> SIIV Arena where selected PhD students and young researchers are asked to show their research topics in the field of roads, railways and airport engineering. PhD students and young researchers are also invited to send an extended abstract to the organising committee that will be included in the proceedings. The scientific committee awards the best research project considering the quality of the presentation, the impact and the perspective of the research.

PhD students, research fellows and young researchers dealing with transportation infrastructure engineering are invited to attend and actively participate in the courses and workshops to encourage exchange of knowledge and to stimulate new challenges and scientific achievements.

### Host location

San Marino is the most ancient Republic in Europe and became a Unesco World Heritage site in 2008. San Marino lives of history, culture and hospitality surrounded by mediaeval architectures and green hills looking at the Adriatic Sea from the Monte Titano.

As a small State, the Republic of San Marino is identified with, and finds its highest potentialities in tight synergies among National Institutions, addressing its aspirations to more and more ambitious purposes even in spreading and supporting cultural events and advanced education.

The University of the Republic of San Marino and the Azienda Autonoma di Stato per i Lavori Pubblici (AASLP - National Enterprise for Public Works) are honoured to host and to collaborate with the Società Italiana Infrastrutture Viarie (SIIV – Infrastructure Italian Society) and the University of Parma for the organization of the 17<sup>th</sup> International SIIV Summer School and 5<sup>th</sup> SIIV Arena to be held in September 16-20, 2019 in the Republic of San Marino, San Marino.

The 17<sup>th</sup> International SIIV Summer School and 5<sup>th</sup> SIIV Arena will be held at the Monastero Santa Chiara. The Monastero is located in the San Marino historic center and was founded in 1609 hosting nuns till 1971. Nowadays, the Monastero has been completely renewed and it is one of the facilities of the University of the Republic of San Marino.

Venue: Università della Repubblica di San Marino, Monastero Santa Chiara, Contrada Omerelli, 20 – 47890 San Marino

### Organising committee

SIIV is an Italian scientific association which gathers about 150 academic members dealing with road, railways and airport engineering.

In the field of transportation infrastructures, the aims of SIIV are mainly addressed to promote learning and technical-scientific knowledge, to encourage debates and to establish relationships and strategic experience exchanges with other institutions.

Working as a non-profit association since 1990, SIIV organises technical committees, research groups, meetings, and supports scientific and teaching initiatives, leading to the improvement of knowledge on transportation infrastructures.

The SIIV Summer School takes place every September as a specific event that involves and brings into close contact the most representative leaders from the academic field and PhD students, research fellows and young researchers to facilitate exchange of skills, discussion and interaction among them.

#### Committee chairs

Prof. Antonio Montepara, University of Parma, Italy

PhD. Andrea Grilli, University of the Republic of San Marino, Republic of San Marino

#### Secretary

PhD. Andrea Grilli, University of the Republic of San Marino, Republic of San Marino

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### Registration (to be confirmed)

Item	Before 31-06-2019	After 31-06-2019
Single room	600	750
Double room	450	550
SIIV association fee (to be paid by no SIIV members)	50	50
Accompanying person	250	350

The registration includes: accommodation, breakfast, lunch, dinner, coffee breaks, attendance at the summer school and workshop, summer school documents, organized technical and touristic activities.