Preface

The International Conference on Behaviour of Steel Structures in Seismic Areas, called STESSA, has reached its ninth edition. It is a specialty conference in the field of seismic resistant steel structures, held every three years.

The ninth edition of STESSA has been organized by the University of Canterbury (Department of Civil and Natural Resources Engineering, Christchurch, New Zealand), together with the University of Auckland (Department of Civil and Environmental Engineering, Auckland, New Zealand) and the Steel Construction New Zealand, in cooperation with the University of Naples "Federico II" (Department of Structures for Engineering and Architecture, Naples, Italy).

Christchurch (New Zealand) was selected for the venue of the Conference in the current 9th edition. Previous editions were held in Timisoara (Romania, 1994), Kyoto (Japan, 1997), Montreal (Canada, 2000), Naples (Italy, 2003), Yokohama (Japan, 2006), Philadelphia (United States, 2009), Santiago (Chile, 2012) and Shanghai (China, 2015).

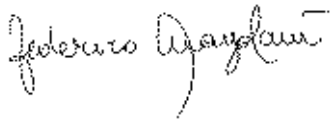
Results of recent research from all over the world in the field of steel structures in seismic areas are presented through 137 papers by experts from 26 countries (Algeria, Argentina, Australia, Belgium, Canada, Chile, China, Colombia, Ecuador, France, Greece, Hong Kong, India, Indonesia, Iran, Italy, Japan, New Zealand, Portugal, Romania, Slovakia, South Korea, Switzerland, Taiwan, Turkey, UK, USA). Papers are published as two pages extended abstract in hard copy and as full paper in electronic copy on a USB device. The full paper collection on USB is published on "Key Engineering Materials", a peer reviewed journal, by TTP (Trans Tech Publications Ltd), indexed by SCImago Journal & Country Rank (SJR), which provides a full open access to the authors. The conference proceedings are subdivided into chapters corresponding to the working sessions of the STESSA2018 Conference, representing the following main topics of the conference:

1. *Performance based design of structures*: methods for seismic and robustness design, collapse risk and loss assessment of the main seismic-resistant steel structures.
2. *Behaviour of connections*: influence of connections on the structural response, traditional and innovative joints, fabrication rules.
3. *Behaviour of members and components*: buckling phenomena, design overstrength, failure modes, capacity design criteria, hysteretic behaviour, cold-formed sections, analysis of beam and floor systems.
4. *Experimental studies*: bracing systems, MRF, BRB, traditional and innovative connections, dissipative devices, cold-formed structural systems, nonstructural components, hollow sections members, shake table tests, static and dynamic tests.
5. *Numerical modelling*: bracing systems, MRF, tall buildings, cold-formed structures and sections, floor systems, connections, viscous dampers, dissipative systems.
6. *Structural systems:* bracing systems, MRF, steel plate shear walls, special devices, dual systems, cold-formed structures, collapse analysis, seismic design.
7. *Mixed and composite structures*: mixed members, slabs and walls made of steel and reinforced concrete, concrete filled steel tube (CFST) constructions.
8. *Buckling restrained braces*: low-cycle fatigue performance, seismic design, deformation measuring devices, finite element modelling, effects of out-of-plane displacements, seismic stability, behaviour factor, design guidelines, fabrication rules.

9. *Passive control*: viscous dampers, magneto-rheological devices, innovative connections, base isolated structures, low-damage dissipaters.
10. *Case studies*: BRB, MRF, braced frames, industrial buildings, office towers, existing structures, metal shear panels, arch bridges.
11. *Assessment and retrofitting*: seismic repairing and retrofitting of members and structures by means of steel based systems.
12. *Codes, standards and design guides*: remarks on international codes, comparison among standards, new design formulations.

International experts have been invited as keynote speakers: Michel Bruneau (University of Buffalo, USA), Charles Clifton (University of Auckland, New Zealand), Stephen Hogg (Aurecon New Zealand Ltd), Raffaele Landolfo (University of Naples "Federico II", Italy), Guo Qiang Li (Tongji University, China), Gregory MacRae (University of Canterbury, New Zealand), Toru Takeuchi (Tokyo Institute of Technology, Japan), and Robert Tremblay (Polytechnique Montréal, Canada). The full keynote lectures are published in the hard copy volume.

The Chairmen wish great success for this STESSA2018 Conference edition, for enhancing the development and the realization of steel structures in seismic prone countries, promoting a strong and fruitful synergy among all the stakeholders, involving scientists, professionals, companies and authorities to continue the excellent worldwide programme of improving the resilience of steel structures in seismic areas



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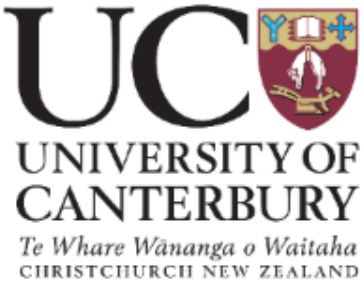
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