

# Spotlight on Structures

Research Journal of The Institution of Structural Engineers

In this section we shine a spotlight on papers recently published in *Structures* – the Research Journal of The Institution of Structural Engineers.

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## Volume 8, Part 2

The latest issue of *Structures*, has recently been published online. This is a special issue presenting papers from the Eighth International Conference on Advances in Steel Structures (ICASS'2015), held in Lisbon, Portugal on 21–24 July 2015. The Guest Editors for the issue were:

- Dinar Camotim, Instituto Superior Técnico, Universidade de Lisboa, Portugal
- Rodrigo Gonçalves, Faculdade de Ciências e Tecnologia, Universidade Nova de Lisboa, Portugal
- Nuno Silvestre, Instituto Superior Técnico, Universidade de Lisboa, Portugal
- Pedro B. Dinis, Instituto Superior Técnico, Universidade de Lisboa, Portugal

## Editors' highlights

The Guest Editors have selected the following highlights which may be of particular interest to members:

### On the Safety of the European Stability Design Rules for Steel Members

*Luís Simões da Silva, Trayana Tankova and Liliana Marques*

<http://dx.doi.org/10.1016/j.istruc.2016.07.004>

### Seismic Response and Engineering of Cold-formed Steel Framed Buildings

*B.W. Schafer, D. Ayhan, J. Leng et al.*

<http://dx.doi.org/10.1016/j.istruc.2016.05.009>

### Design of Concrete Filled Tubular Beam-columns with High Strength Steel and Concrete

*J.Y. Richard Liew, Mingxiang Xiong and Dexin Xiong*

<http://dx.doi.org/10.1016/j.istruc.2016.05.005>

## Full issue

The issue also contains the following articles:

### Systems Reliability for 3D Steel Frames Subject to Gravity Loads

*Wenyu Liu, Kim J.R. Rasmussen and Hao Zhang*

<http://dx.doi.org/10.1016/j.istruc.2016.06.002>

### Comparison of seismic design provisions for buckling restrained braced frames in Canada, United States, Chile, and New Zealand

*R. Tremblay, M. Dehghani, L. Fahnestock, R. Herrera, M. Canales, C. Clifton and Z. Hamid*

<http://dx.doi.org/10.1016/j.istruc.2016.06.004>

### Stressed Skin Effect on the Elastic Buckling of Pitched Roof Portal Frames

*Zs. Nagy, A. Pop, I. Moiş and R. Ballok*

<http://dx.doi.org/10.1016/j.istruc.2016.05.001>

### Shakedown Behavior of a Continuous Steel Bridge Girder Strengthened With Post-Installed Shear Connectors

*Kerry Kreitman, Amir Reza Ghiami Azad, Michael Engelhardt, Todd Helwig and Eric Williamson*

<http://dx.doi.org/10.1016/j.istruc.2016.06.001>

### The Post-buckled Failure of Steel Plate Shear Webs With Centrally Located Circular Cut-outs

*J. Loughlan and N. Hussain*

<http://dx.doi.org/10.1016/j.istruc.2016.05.010>

### Spherical Dome Buckling With Edge Ring Support

*J. Michael Rotter, Greig Mackenzie and Martin Lee*

<http://dx.doi.org/10.1016/j.istruc.2016.05.008>

### Distortional Influence of Pallet Rack Uprights Subject to Combined Compression and Bending

*J. Bonada, M.M. Pastor, F. Roure and M. Casafont*

<http://dx.doi.org/10.1016/j.istruc.2016.05.007>

### Koiter Asymptotic Analysis of Thin-walled Cold-formed Steel Uprights Pallet Racks

*V. Ungureanu, A. Madeo, G. Zagari, G. Zucco,*

*D. Dubina and R. Zinno*

<http://dx.doi.org/10.1016/j.istruc.2016.04.006>

### Dynamic Time-history Elastic Analysis of Steel Frames Using One Element per Member

*Si-Wei Liu, Rui Bai and Siu-Lai Chan*

<http://dx.doi.org/10.1016/j.istruc.2016.05.006>

## Highlights

- Dynamic time-history elastic analysis by one-element-per-member model is proposed
- Geometric nonlinearity allowing large deflections and deformations are considered
- The curved arbitrarily-located-hinge (ALH) beam-column element is employed
- Direct time-integration method via Newmark's algorithm is utilized
- A significant saving in the computational expense is achieved

### Fracture Toughness of G450 Sheet Steels at Ambient Temperature Subjected to Tension

*Cao Hung Pham, Dang Khoa Phan, Minh Toan Huynh and Gregory J. Hancock*

<http://dx.doi.org/10.1016/j.istruc.2016.05.012>

### Response of CFS Sheathed Shear Walls

*Matteo Accorti, Nadia Baldassino, Riccardo Zandonini, Federica Scavazza and Colin A. Rogers*

<http://dx.doi.org/10.1016/j.istruc.2016.07.002>

## Highlights

- Study of light steel residential building in seismic areas
- Experimental investigation of performance of walls under gravity and lateral loads
- Influence of the bracing system and of the sheathing under monotonic and cyclic lateral loads
- Analytical methods for determining the elastic stiffness and strength of sheathed panels
- Deformation capacities and energy dissipation confirm adequacy for low and medium seismic areas