# 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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## Articles in press

The following articles have recently been made available online:

**Finite element modeling of structural steel component failure at elevated temperatures**
*Mina Seif, Joseph Main, Jonathan Weigand, Therese P. McAllister and William Luecke*
http://dx.doi.org/10.1016/j.istruc.2016.03.002

**Effect of the thickness of concrete cover on the fatigue bond strength of GFRP wrapped and non-wrapped reinforced concrete beams containing a lap splice**
*Rayed Alyousef, Tim Topper and Adil Al-Mayah*
http://dx.doi.org/10.1016/j.istruc.2016.01.001

**Buckling and post buckling characteristics of laminated composite plates with damage under thermo-mechanical loading**
*V.M. Sreehari and D.K. Maiti*
http://dx.doi.org/10.1016/j.istruc.2016.01.002

**Highlights**
- Analysis of buckling and post buckling of composite plates with damage using FEM
- Governing equations are based on inverse hyperbolic shear deformation theory
- Effect of damage is simulated by an anisotropic damage formulation
- Critical buckling temperature for a damaged composite plate has been obtained
- Effect of mild damage on thermal post buckling paths is presented

**Robustness analysis of 3D Composite buildings with semi-rigid joints and floor slab**
*S. Jeyarajan and J.Y. Richard Liew*
http://dx.doi.org/10.1016/j.istruc.2016.01.005

**Analytical Modeling in Deformation Analysis of Interference-Fit Structures**
*Nelli Aleksandrova*
http://dx.doi.org/10.1016/j.istruc.2016.01.003

**Highlights**
- Analytical strain analysis of interference-fit structures is performed
- Decohesive carrying capacity criterion based on the radial strains is applied and discussed
- Limit load carrying capacity is estimated for practical engineering purposes
- Interference and expansion ratios are adjusted for practical engineering applications

**Design implications of a new load introduction mechanism into concrete-filled steel tubular columns**
*Mohammad H. Mollazadeh and Yong C. Wang*
http://dx.doi.org/10.1016/j.istruc.2016.01.004

**Slots of Power-Law Profile as Acoustic Black Holes for Flexural Waves in Metallic and Composite Plates**
*E.P. Bowyer and V.V. Krylov*
http://dx.doi.org/10.1016/j.istruc.2016.02.002

**Seismic performance of composite plate shear walls**
*Sandip Dey and Anjan K. Bhowmick*
http://dx.doi.org/10.1016/j.istruc.2016.01.006

**Hencky bar-chain model for buckling analysis of non-uniform columns**
*E. Ruocco, H. Zhang and C.M. Wang*
http://dx.doi.org/10.1016/j.istruc.2016.02.003

**Influence of soil–structure interaction on fragility assessment of building structures**
*Chara Ch. Mitropoulou, Christos Kostopanagiotis, Markos Kopanos, Dennis Ioakim and Nikos D. Lagaros*
http://dx.doi.org/10.1016/j.istruc.2016.02.005

**Refined spatial beam-column element for second-order analysis of lattice shell structure**
*Lin Qi and Yang Ding*
http://dx.doi.org/10.1016/j.istruc.2016.02.001

**Second-order analysis of non-prismatic steel members by tapered beam–column elements**
*Si-Wei Liu, Rui Bai and Siu-Lai Chan*
http://dx.doi.org/10.1016/j.istruc.2016.02.006