Programme

Monday 18 November 2013

09:30  Registration and refreshments
10:20  Welcome address

Session 1: DIC and SHPB
Chair: P Chen, Beijing Institute of Technology, China
10:30  High speed DIC for Hopkinson tests
       P Verleysen, Ghent University, Belgium
10:55  Using Digital Image Correlation in split Hopkinson (Kolsky) bar experiments
       A Gilat, The Ohio State University, USA
11:20  Verification of a modified Split Hopkinson Pressure Bar setup with Digital Image Correlation
       R Eriksen, Technical University of Denmark, Denmark
11:45  Measurement of stress wave propagation based on the high-speed DIC method
       B Guo, Beijing Institute of Technology, China
12:10  Taylor, SHPB and other high-rate testing of metals
       A Worley, Imperial College London, UK
12:35  Lunch

Chair: F Pierron, University of Southampton, UK
13:35  (keynote) Using uncertainty quantification to find (and minimize) the largest error sources in high-speed DIC
       P Reu, Sandia National Laboratories, USA

Session 2: Blast/perforation
Chair: P Forquin, University of Grenoble, France
14:25  Experimental study on the dynamic full-field deformation of thin metal discs under blast loading by using 3D Digital Image Correlation
       P Chen, Beijing Institute of Technology, China
14:50  Digital image correlation during perforation of an aluminium alloy at low velocities
       G Achard, Laboratoire MSMP - Arts et Métiers, France
15:15  Digital Image Correlation technique applied to laminated glass plates under free air blast loading
       S Van Dam, Ghent University, Belgium
15:40  Refreshment break

Session 3: Technique development
Chair: P Reu, Sandia National Laboratories, USA
16:00  Feasibility of a novel 3D shape measurement technique for test specimens subjected to bird strike using a printed line pattern
       F Allaey, Ghent University, Belgium
### High-speed imaging for dynamic testing of materials and structures

**High-speed measurement system for birefringence distribution**  
Y Otani, Utsunomiya University, Japan  
16:25

**Shearogram analysis by improved spiral phase transform and its application in dynamic testing of WTB**  
J Xu, TWI Limited, UK  
16:50

**High-speed digital holographic methods to characterize the transient acousto-mechanical response of human tm**  
I Dobrev, Worcester Polytechnic Institute, USA  
17:15

**End of day one**  
17:40

**Walking tour and Fish & Chips supper**  
18:30

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### Tuesday 19 November 2013

**Session 4: Metrology**  
*Chair: L Lamberson, Drexel University, USA*

<table>
<thead>
<tr>
<th>Time</th>
<th>Title</th>
<th>Speaker</th>
<th>Location</th>
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<tbody>
<tr>
<td>09:00</td>
<td>Temporal aliasing in high-speed 3-dimensional digital image correlation vibration measurement</td>
<td>T Bebemiss, US Air Force Research Labs, USA</td>
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<tr>
<td>09:25</td>
<td>Systematic errors in the use of high speed cameras for digital image correlation</td>
<td>G Battams, University of Southampton, UK</td>
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<td>09:50</td>
<td>Benchmarking ultra-high speed cameras for full-field deformation measurement</td>
<td>F Pierron, University of Southampton, UK</td>
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<td>10:15</td>
<td>Laser-generated pulsed x-ray source for applications in dynamic imaging</td>
<td>R Clarke, STFC Rutherford Appleton Laboratory, UK</td>
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<td>10:40</td>
<td>Refreshment break and exhibition</td>
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**Session 5: Fracture/damage**  
*Chair: A Gilat, The Ohio State University, USA*

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<tr>
<td>11:10</td>
<td>Towards high-speed digital image correlation measurements of dynamic ruptures along frictional interfaces</td>
<td>V Rubino, California Institute of Technology, USA</td>
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<td>11:25</td>
<td>Determination of specimen sizes of concrete subjected to static loading in comparison to those from split Hopkinson bar test for computation of dynamic increasing factor</td>
<td>S Wang, National University of Singapore, Singapore</td>
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<tr>
<td>11:50</td>
<td>Experimental and numerical investigations of damage modes in ceramics subjected to impact loading</td>
<td>P Forquin, University of Grenoble, France</td>
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<tr>
<td>12:15</td>
<td>The nature of light as an optical damage measurement</td>
<td>L Lamberson, Drexel University, USA</td>
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<td>12:40</td>
<td>Exhibitor presentations</td>
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<tr>
<td>13:00</td>
<td>Lunch and exhibition</td>
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15:00 (keynote) High-speed imaging: history, techniques and applications
J Field, University of Cambridge, UK

15:50 Imaging Round Table

16:50 DYMAT General Assembly

18:20 End of day two

19:30 Conference dinner – Institute of Physics

Wednesday 20 November 2013

09:00 (keynote) Pulsed Digital Holography for the measurement of transient mechanical events
M Sjödahl, Luleå University of Technology, Sweden

Session 6-1: Identification 1 – materials
Chair: P Verleysen, Ghent University, Belgium

09:50 Identification of constitutive behaviour of materials based on ultra-high speed imaging and the Virtual Fields Method
H Zhu, Mechanics Surfaces and Materials Processing Laboratory, Arts et Métiers ParisTech, France

10:15 The virtual fields method to the uniaxial mechanical behaviour of hyperelastic materials at medium strain rate
S-H Yoon, University of Oxford, UK

10:40 On the use of the Virtual Fields Method to characterize the dynamic response of geomaterials in spalling tests
P Forquin, University of Grenoble, France

11:05 Refreshment break

Session 6-2: Identification 2 – forces/vibration
Chair: M Sjödahl, Luleå University of Technology, Sweden

11:30 Modal identification using shape features and high speed digital image correlation measurements
W Wang, Manchester Metropolitan University, UK

11:55 Medium velocity impact force estimation through high speed digital image correlation
J-C Passieux, Université de Toulouse, Institut Clément Ader, France

12:20 Identification of bending dynamic load using full-field curvature measurements
C Devivier, University of Southampton, UK

12:45 Lunch
**Session 7: Composites**

*Chair: J M Barton, University of Southampton, UK*

13:45  Experimental and analytical analysis of the blast resistance of foam sandwich structures for naval applications  
M Kelly, Imperial College London, UK

14:10  High strain rate behaviour of unidirectional and textile composites under compression and combined compression-shear loading  
H Koerber, Technische Universität München, Lehrstuhl für Carbon Composites, Germany

14:35  Characterization of interfacial fracture toughness of sandwich structures using high speed infrared thermography  
W Wang, University of Southampton, UK

15:00  Closing remarks