



**55 HRV**

**55th Conference  
for Human Responses to Vibration**

**55<sup>th</sup> ANNUAL CONFERENCE on HUMAN RESPONSES to VIBRATION**

**Wednesday 22 to Friday 24 June 2022 - Exeter University, Streatham Campus, Exeter EX4 4QJ**

**PROGRAMME**

The Streatham Campus, the University's largest site in Exeter, is built around a country estate overlooking the city and is readily acknowledged as one of the most beautiful in the country.

A Registered Botanic Garden, Streatham Campus is described by The Times as the 'best-gardened campus in Britain' and by The Independent as having a 'sublime' setting. The grounds feature many exotic trees and shrubs with stunning views across the city to the sea at Exmouth. Many students say they simply fell in love with the campus when they came to visit – its lakes, parkland, woodland and gardens make it a very special place that offers a safe and enjoyable environment for study.

The campus has seen huge investment over the past couple of years, the most ambitious part of which is the Forum, which provides a stunning centerpiece, offering a new Student Services Centre, a refurbished library, new technology-rich learning spaces, a 400-seat lecture theatre, a new University reception and retail and catering outlets. All the teaching buildings, together with the sports park, the library, the shops, restaurants, cafés and bars are within walking distance of each other.

**DAY 1 - Wednesday 22 June 2022**

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| <b>11.00 to 12.15</b> | <b>Registration, Xfi Building</b>  |
| <b>12.15 to 13.15</b> | <b>Finger Buffet Lunch, Xfi Building</b>   |
| <b>13.15 to 13.45</b> | <b>Welcome and Introductions</b>   |
| <b>Local Chair:</b>   | <b>Professor James Brownjohn – Welcome to Exeter and domestics</b>   |
| <b>Co-host:</b>       | <b>Gurmail Paddan - Head of Acoustics &amp; Vibration, Institute of Naval Medicine, Hampshire</b>  |
| <b>13.45 to 16.00</b> | <b>Visit to Exeter Science Park by coach for a demonstration of the unique state-of-the-art VSimulators research facility &amp; group photos</b> |
| <b>17.30 to 19.00</b> | <b>Drinks reception at Holland Hall Dining Room</b>  |
| <b>19.00 to 21.00</b> | <b>Informal serverly dinner in Holland Hall Dining Room</b>  |

**END OF DAY 1**

**DAY 2 – Thursday 23 June 2022**

<b>07.30 to 09.00</b>	<b>Breakfast in Holland Hall Dining Room</b>
<b>09.00 to 09.30</b>	<b>Tea, coffee, fruit juice &amp; pastries in Student Study Area, Xfi building</b>
<b>09.30 to 10.00</b>	<b><u>Session 1 - Keynote Speech</u></b>  <b>Professor Ian Walker, FHEA, Head of Department of Psychological Sciences, University of Surrey</b>
<b>10.00 to 11.15</b>	<b><u>Session 2 - Presentations (themed)</u>- 20 minutes per speaker</b>
<b>10.00 to 11.00</b>	<b>groups 1, 2 &amp; 3 (“Physiological Effects of Vibration”)</b>
<b>11.00 to 11.15</b>	<b>Panel discussion (<i>James Brownjohn, Yi Qui, Gurmail Paddan</i>)</b>
<b>11.15 to 11.45</b>	<b>Tea, coffee and biscuits in Student Study Area, Xfi Building</b>
<b>11.45 to 13.00</b>	<b><u>Session 3 - Presentations (themed)</u> - 20 minutes per speaker</b>
<b>11.45 to 12.45</b>	<b>groups 11, 17 &amp; 19 (“Hand and Hand-Arm Vibration”)</b>
<b>12.45 to 13.00</b>	<b>Panel discussion (<i>Alex Pavic, Ian Walker, Mark Taylor</i>)</b>
<b>13.00 to 14.00</b>	<b>Finger Buffet Lunch in Student Study Area, Xfi Building</b>
<b>14.00 to 15.15</b>	<b><u>Session 4 - Presentations (themed)</u> - 20 minutes per speaker</b>
<b>14.00 to 15.00</b>	<b>groups 4, 16 &amp; 23 (“Use of Mechanical Shakers”)</b>
<b>15.00 to 15.15</b>	<b>Panel discussion (<i>Yin Ye, James Brownjohn, Jerome Rebelle</i>)</b>
<b>15.15 to 15.45</b>	<b>Tea, coffee and cream tea in Student Study Area, XfiBuilding</b>
<b>15.45 to 17.20</b>	<b><u>Session 5 - Presentations (themed)</u> - 20 minutes per speaker</b>
<b>15.45 to 17.05</b>	<b>groups 7, 12 &amp; 14 (“Whole Body Vibration”)</b>
<b>17.05 to 17.20</b>	<b>Panel discussion (<i>Gurmail Paddan, Alex Pavic, Genevieve Williams</i>)</b>
<b>19.00 to 23.00</b>	<b>Cash bar in Reed Hall</b>
<b>19.00 to 23.00</b>	<b>Relaxed Dining Menu (3 Course) in Reed Woodbridge</b>
<b><u>END OF DAY 2</u></b>	

**DAY 3 – Friday 24 June 2022**

- 07.30 to 09.00** Breakfast in Holland Hall Dining Room
- 09.00 to 09.30** Tea, coffee, fruit juice & pastries in Student Study Area, Xfi building
- 09.30 to 10.00** **Session 6 - Keynote Speech**  
Dr. Yi Qiu, Associate Professor,  
Engineering and Physical Sciences at Southampton University
- 10.00 to 11.00** **Session 7 - Presentations (themed)- 20 minutes per speaker**  
groups 8, 13 & 15 (“Human-Powered Vehicles”)
- 11.00 to 11.15** Panel discussion (*James Brownjohn, Ian Walker, Mark Taylor*)
- 11.15 to 11.45** Tea, coffee and biscuits in Student Study Area, Xfi Building
- 11.45 to 12.45** **Session 8 - Presentations (themed) - 20 minutes per speaker**  
groups 9, 10 & 20 (“Vibration Assessment”)
- 12.45 to 13.00** Panel discussion (*Gurmail Paddan, Alex Pavic, Yi Qui*)
- 13.00 to 14.00** Finger Buffet Lunch in Student Study Area, Xfi Building
- 14.00 to 15.00** **Session 9 - Presentations (themed) - 20 minutes per speaker**  
groups 18, 21 & 22 (“Mechanically Powered Vehicles”)
- 15.00 to 15.15** Panel discussion (*James Brownjohn, Alex Pavic, Mark Taylor*)
- 15.15 to 15.45** Tea, coffee and cream tea in Student Study Area, XfiBuilding
- 15.45 to 16.15** **Session 10 – Close of Conference & Consideration of Future Conferences**  
Professor James Brownjohn, Alex Pavic, Gurmail Paddan and Paul Pitts,  
Chair of International Advisory Committee on Hand Arm Vibration

*The programme may be subject to change. Speaker session numbers as per abstract submission numbers (list attached).*

	Authors	Title
1	Shuxiang Gao and Yin Ye	Acute effects of force & vibration on finger blood flow & finger temperature
2	Yahya Sumayli & Ying Ye	The effect of visual scene on motion sickness induced by lateral oscillation
3	Ying Ye	The effect audible noise on tactile sensitivity
4	Pietro Marzaroli, Hemes Giberti, Stefano Marelli and Marco Tarabini	Design & commissioning of 3D shaker for study of response of standing subjects to WBV
7	Rajesh Govindan, V H Saran and S P Harsha	Analysis of transmissibility responses of a semi-supine human body using response surface method
8	Hamzah Khalil, Samuel Milliner, Jem Rongong and Matt Carré	Assessing hand-arm vibration as experienced by cyclists using a MDOF model
9	Jérôme Rebelle	Designing & developments made concerning low-cost speed sensor to refine analysis during whole-body vibration assessments
10	Jérôme Rebelle	A new design of hinged lip at end of the dock leveller platform: which vibration & shock reduction obtained?
11	Setsuo Maeda, Ying Ye and Junya Tatsuno	A study on performance evaluation of anti-vibration gloves using on body hand-transmitted vibration measurement method
12	Ying Ye and Setsuo Maeda	Roadmap of comfort evaluation for whole-body vibration
13	Marco Tarabini, Stefano Marelli and Federico Stella	Effect of posture & handlebar characteristics on vibration transmissibility in cycling
14	Alex P. Moorhead, Stefano Marelli, Giuseppe Lorenzini, Andrea Mazzoleni, Alessandra Goggi, Enrico Marchetti and Marco Tarabini	Effect of lateral whole-body vibration on cognitive reaction times
15	Ophelie Lariviere, Delphine Chadeaux, Christophe Sauret and Patricia Thoreux	Prediction of vibration exposure during manual wheelchair propulsion
16	Mutsuhiro Yoshizawa and Harumi Yoneda	Influence of human responses to vibration on earthquake experience VR system
17	Gurmail Paddan	Exposure to hand-transmitted vibration during 'knockover' process
18	Matt Griffin & Gurmail Paddan	Vibration measurements on a tactical watercraft 'Jet ski'
19	Massimo Cavacece	A distributed parameter dynamic model of human hand arm system
20	Massimo Cavacece	Comfort assessment in high-speed train by an improved MIMO model
21	Neil Mansfield, Geetika Aggarwal, Frederique Vanheusden and Steve Faulkner	Human exposure to vibration in the passenger cabin of a turboprop aircraft
22	Geetika Aggarwal, Neil Mansfield, Steve Faulkner and Frederique Vanheusden	Relative contribution of vibration, noise & thermal stimuli to discomfort of aircraft passengers
23	Genevieve Williams	New insights into human balance control strategies on small amplitude moving surfaces.