

# VIETNAM-UK COLLABORATION IN IMPROVING THE RESILIENCE OF INFRASTRUCTURE IN STORMS



THE ROYAL SOCIETY



Vietnamese-German University



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VJU

Vietnam Japan University  
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3<sup>rd</sup> Workshop on

## Risk modelling to improve infrastructure resilience to typhoons

25. – 26. May 2021

### Workshop background

Slender structures such as tall buildings, long span bridges, masts and towers are increasingly important components in our transport and communication infrastructure. These slender structures are extremely sensitive to wind loading and are especially prone to large amplitude dynamic wind-structure interactions. This can lead to collapse during typhoon winds and the subsequent failure of communication and power distribution networks has serious consequences for disaster response and maintaining economic productivity.

Reliability methods provide an appropriate probabilistic framework for predicting these risks by combining models of the typhoon hazard, the asset vulnerability and the consequences of failure. This framework enables targeted interventions to improve the resilience of the networks leading to better disaster preparedness and response.

The workshop will highlight the application of this framework to typhoon risks in Vietnam and provide delegates with the opportunity to learn from invited international experts working on similar challenges across the world. This is an important activity of a long-term collaboration between the UK and Vietnam through the project “Improving the Resilience of Infrastructure in Storms (IRIS)” supported by the Royal Society and the Global Challenges Research Fund (GCRF).

### Workshop organization

The workshop is held as **online event**, hosted by The University of Nottingham.

Please **register your attendance** [here](#) or with the contact persons listed in the column on the right.

### Speakers

**Dr Nguyen Dai Minh**

Vietnam Institute for Building Science and Technology

**Dr Nguyen Dang Mau**

Vietnam Institute of Meteorology, Hydrology and Climate Change

**Dr Vu Thanh Trung**

Vietnam Institute for Building Science and Technology

**Dr John Owen**

University of Nottingham, UK

**Dr John Macdonald**

University of Bristol, UK

**Dr Luis Neves**

University of Nottingham, UK

**Dr Sean Wilkinson**

Newcastle University, UK

**Dr Nguyen Ngoc Huy**

Oxfam, Vietnam

**Dr Nguyen Huy Cung**

University of Nottingham, UK

**Dr Carmine Galasso**

University College London, UK

### Workshop fee

Attendance of the workshop is **free of charge**.

### Contact persons

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25.05.2021 – Day 1		
<b>14:00-15:00</b>	<b>Registration – the link to the Microsoft Teams meeting will be informed by email to the registered participants</b>	
15:00-15:15	Welcome message	Dr. Nguyen Hoang Oanh, Vice Rector of VJU Dr Jörg Franke, VGU
15:20-15:50	Introduction to IRIS	Dr John Owen The University of Nottingham, UK
15:55-16:05	A wind map to be used in a New Vietnam Building Code QCVN 02/2021 BXD	Dr Nguyen Dai Minh IBST, Vietnam
16:05-16:35	Wind Data and analysis	Dr Nguyen Dang Mau, IMHEN, Vietnam
16:35-17:00	New wind load calculation method in New Vietnam standard TCVN 2737:2021 "Actions and effects"	Dr Vu Thanh Trung IBST, Vietnam
<b>17:00-17:30</b>	<b>Tea and coffee break</b>	
17:30-18:00	Typhoon wind map for Vietnam	Dr John Owen The University of Nottingham, UK
18:05-18:35	Wind-induced instability of slender structures	Dr John Macdonald University of Bristol, UK
18:40-19:25	Questions and answers	

26.05.2021 – Day 2		
<b>14:00-15:00</b>	<b>Registration – the link to the Microsoft Teams meeting will be informed by email to the registered participants</b>	
15:00-15:30	Risk and resilience analysis of lifelines under typhoons	Dr Luis Neves The University of Nottingham, UK
15:35-16:05	Application of Consequence Forecasting to estimate the Resilience of power network to windstorm	Dr Sean Wilkinson Newcastle University, UK
16:10-16:40	Introduction of Aware Hero: an approach of using Information and Communications Technology (ICT) and social media for disaster management	Dr Nguyen Ngoc Huy Oxfam, Vietnam
16:45-17:15	Vulnerability modelling of lighting poles to galloping in typhoons	Dr Nguyen Huy Cung The University of Nottingham, UK
<b>17:15-17:45</b>	<b>Tea and coffee break</b>	
17:45-18:15	Typhoon risk and climate-change impact assessment of community assets	Dr Carmine Galasso University College London, UK
18:20-18:50	Future development and collaboration	Dr John Owen The University of Nottingham, UK Dr Jörg Franke, VGU
18:55-19:40	Questions and answers	
19:45-20:00	Closure	Dr Jörg Franke, VGU Dr Nguyen Tien Dung, VJU