

## Biography

Dr JIANG Liming is Assistant Professor in the Department of Building Environment and Energy Building, working primarily on fire safety engineering of building structures. His Research Interests include: Fire behavior in modern buildings; Structural response of tall building in fire, Hybrid simulation/testing for structures in fire; Fire-safe timber structure; Computational modelling and software development:OpenSees for Fire ([openseesforfire.github.io](https://openseesforfire.github.io))

## Qualifications

Bachelor of Engineering, Tongji University

Master of Engineering, Tongji University

Doctor of Philosophy, University of Edinburgh

## Employment

### Assistant Professor

Assistant Professor

Department of Building Environment and Energy Engineering

The Hong Kong Polytechnic University

1 Jul 2022 → present

## Research outputs

### Fire spread and burning dynamics of non-uniform wood crib for evolved design fire scenarios

Nan, Z., Khan, A. A., Zhang, X., Jiang, L., Huang, X. & Usmani, A., Oct 2023, In: Fire Safety Journal. 140, 103840.

### OPS-ITO: Development of Isogeometric Analysis and Topology Optimization in OpenSEES for Free-Form Structural Design

Zhang, Z., Jiang, L., Yarlagaadda, T., Zheng, Y. & Usmani, A., Jul 2023, In: CAD Computer Aided Design. 160, 103517.

### Fire Impact on Vertical Components Subjected to a Localised Fire Estimated Using a Line Source Model

Chu, T., Jiang, L., Zhu, G. & Usmani, A., 2 Jun 2023, (E-pub ahead of print) In: Fire Technology. 33 p.

### On the orientation effect on the flame spread over discrete fuel using a mass-transfer number

Zhang, X., Chu, T., Jiang, L., Zhu, G., Liu, X., Xu, X. & Wu, Z., Feb 2023, In: Fire Safety Journal. 135, 103730.

### Application of travelling behaviour models for thermal responses in large compartment fires

Nan, Z., Khan, A. A., Jiang, L., Chen, S. & Usmani, A., Dec 2022, In: Fire Safety Journal. 134, 103702.

### OpenSees development for modelling timber structural members subjected to realistic fire impact

Chen, C., Jiang, L., Qiu, J., Orabi, M. A., Chan, W. S. & Usmani, A., Nov 2022, In: Fire and Materials. 47, 4, p. 461-478

### Solid isotropic material with thickness penalization – A 2.5D method for structural topology optimization

Yarlagaadda, T., Zhang, Z., Jiang, L., Bhargava, P. & Usmani, A., 1 Oct 2022, In: Computers and Structures. 270, 106857.

### Dual-3D hybrid fire simulation for modelling steel structures in fire with column failure

Cai, X., Jiang, L., Qiu, J., Orabi, M. A., Yang, C., Lou, G., Khan, M., Yuan, Y., Li, G. & Usmani, A., Oct 2022, In: Journal of Constructional Steel Research. 197, 107511.

### A Review on Structural Fire Tests of Two-Way Composite Floors

Orabi, M. A., Jiang, L., Huang, X. & Usmani, A., Sept 2022, In: Fire Technology. 58, 5, p. 2533-2587 55 p.

### Model characterisation of localised burning impact from localised fire tests to travelling fire scenarios

Khan, A. A., Nan, Z., Jiang, L., Gupta, V., Chen, S., Khan, M. A., Hidalgo, J. & Usmani, A., 15 Aug 2022, In: Journal of Building Engineering. 54, 104601.

### **Realistic fire resistance evaluation in the context of autonomous infrastructure**

Jiang, L., Wu, X. & Jiang, Y., 28 Jun 2022, *Handbook of Cognitive and Autonomous Systems for Fire Resilient Infrastructures*. Springer

### **Modelling concrete slabs subjected to localised fire action with OpenSees**

Orabi, M. A., Qiu, J., Jiang, L. & Usmani, A., 22 Apr 2022, In: *Journal of Structural Fire Engineering*.

### **A computational approach for modelling composite slabs in fire within OpenSees framework**

Qiu, J., Jiang, L., Anwar Orabi, M., Usmani, A. & Li, G., 15 Mar 2022, In: *Engineering Structures*. 255, 113909.

### **OpenFIRE: An Open Computational Framework for Structural Response to Real Fires**

Aatif Ali Khan, Khan, M. A., Zhang, C., Jiang, L. & Usmani, A., Mar 2022, In: *Fire Technology*. 58, 2, p. 1011-1038 28 p.

### **The Collapse of World Trade Center 7: Revisited**

Orabi, M. A., Jiang, L., Usmani, A. & Torero, J., Mar 2022, In: *Fire Technology*. 28 p.

### **Integrated nonlinear structural simulation of composite buildings in fire**

Orabi, M. A., Aatif Ali Khan, Jiang, L., Yarlagaadda, T., Torero, J. & Usmani, A., 1 Feb 2022, In: *Engineering Structures*. 252, 113593.

### **Effects of reinforcement ratio on seismic performance of hypothetical stations determined by full-scale central column tests**

Cai, X., Yang, C., Yuan, Y. & Jiang, L., Jan 2022, In: *Bulletin of Earthquake Engineering*. 20, 2, p. 1115-1141 27 p.

### **Post-fire Repair of Concrete Structural Members: A Review on Fire Conditions and Recovered Performance**

Qiu, J., Jiang, L. & Usmani, A., Dec 2021, In: *International Journal of High-Rise Buildings*. 10, 4, p. 323-334 12 p.

### **Thermal Analysis Infrastructure in OpenSees for Fire and its Smart Application Interface Towards Natural Fire Modelling**

Jiang, L., Jiang, Y., Zhang, Z. & Usmani, A., Nov 2021, In: *Fire Technology*. 57, 6, p. 2955-2980 26 p.

### **Modelling concrete slabs subjected to fires using nonlinear layered shell elements and concrete damage-plasticity material**

Jiang, L., Orabi, M. A., Jiang, J. & Usmani, A., 1 May 2021, In: *Engineering Structures*. 234, 111977.

### **An extended travelling fire method framework for performance-based structural design**

Dai, X., Welch, S., Vassart, O., Cábová, K., Jiang, L., Maclean, J., Clifton, G. C. & Usmani, A., 1 Apr 2020, In: *Fire and Materials*. 44, 3, p. 437-457 21 p.

### **Remaining fire resistance of steel frames following a moderate earthquake – A case study**

Zhou, M., Jiang, L., Chen, S., Cardoso, R. P. R. & Usmani, A., Jan 2020, In: *Journal of Constructional Steel Research*. 164, 105754.

### **Damage investigation of cementitious fire resistive coatings under complex loading**

Chen, S., Jiang, L., Wu, L., Wang, Y. & Usmani, A., 20 Apr 2019, In: *Construction and Building Materials*. 204, p. 659-674 16 p.

### **Computational performance of beam-column elements in modelling structural members subjected to localised fire**

Jiang, L. & Usmani, A. S., 1 Feb 2018, In: *Engineering Structures*. 156, p. 490-502 13 p.

## **Activities**

### **Recent Progress on compartmental fire and numerical modelling research**

Liming Jiang (Invited speaker)

6 Jun 2023

**Recent Progress on compartmental fire and numerical modelling research**

Liming Jiang (Invited speaker)

29 May 2023

**Examination board of MSc programme in Chongqing University**

Liming Jiang (Examiner)

27 May 2023

**Trend and rethinking of 'Structures in Fire' Research and Numerical Modelling Solutions**

Liming Jiang (Invited speaker)

26 May 2023

**12th International Conference on Structures in Fire**

Liming Jiang (Chair)

2022

**Fire Technology (Journal)**

Liming Jiang (Guest editor)

2022 → 2023

**Evolution of computational simulation for fire safety assessment of modern buildings towards hybrid approaches**

Liming Jiang (Invited speaker)

2 Dec 2021

**Fire safety and numerical simulation of timber buildings in the context of carbon neutralization**

Liming Jiang (Invited speaker)

Oct 2021

**Projects**