

**Conférence**

**Conference**

## **An Innovative Flood Resilient Modular Structural Steel Structure: Flood-Jack System**

### **Conférencier | Speaker**

#### **Dr. Luigi Di Sarno**

Senior Lecturer in Structural Design  
at University of Liverpool, UK  
and Associate Professor in Earthquake  
Engineering and Structural Dynamics  
at University of Naples,  
Federico II, Italy.



### **Date**

**30 mars 2023**

### **Heure | Hour**

**12:30 à 13:30**

### **Local**

**C-539.6 - Polytechnique Montréal**

### **Lien**

<https://polymtl-ca.zoom.us/j/88307017888?pwd=VEZYOTk1SGprMVNXSzB5aStub2kwUT09>

### **Résumé | Abstract**

Flooding is the most common natural hazard when considering direct damage to structures and infrastructure plus number of death toll. Moreover, climate change has exacerbated the exposure to natural hazard as extreme weather events are likely to become more frequent in countries historically not prone to this phenomenon. "Flood-Jack System" (FJS) is an effective low-cost and resilient structural steel system that can be adopted in flood-prone zones. This system comprises hydraulic jacks at ground level that uplift a modular steel system to 1.5 metres maximum when subjected to floods. The full-scale prototype of FJS was recently tested at HR Wallingford in the UK, considering different flooding scenarios. The seminar will discuss the performance of the novel FJS which has been developed ensuring a reduction in manufactured resources/materials (initial carbon savings) plus compliance with codes-of-practice through design-by-testing, also delivering affordable and sustainable Modern Methods of Construction (MMC).