



Yamazaki Lab

Create strong wooden buildings that are resilient to earthquakes and other disasters

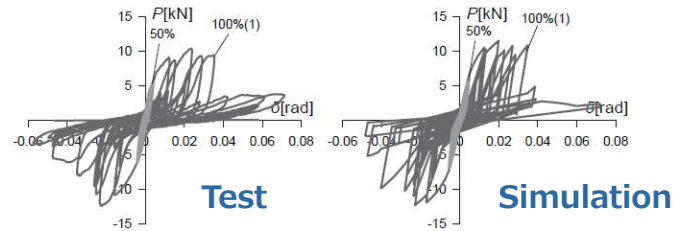
Multidisciplinary Resilience Research Center / Structural Engineering

<http://yamazaki.mrrc.iir.titech.ac.jp/>

- Simulation of seismic response of wooden buildings subjected to multiple earthquake motions
- Performance evaluation and design of structural elements consisting of resilient wooden buildings

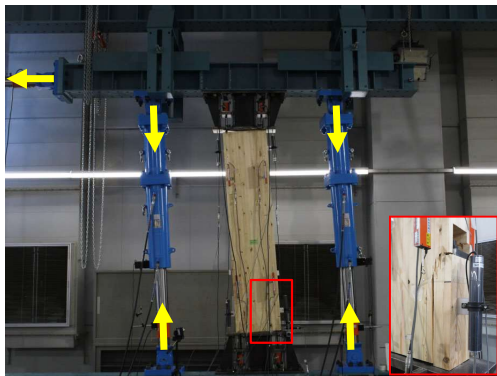
In the 2016 Kumamoto earthquake, major earthquakes attacked multiple times. We research on methods to simulate earthquake response under such severe conditions, as well as technologies to enhance safety level through the application of passive control devices.

We conduct experiments to verify the behavior of various elements that support the structural safety of wooden buildings (e.g., columns, walls, floors, roofs) to evaluate their performance, and to develop design methods.



Behavior of wooden buildings subjected to multiple earthquake motions

- Development of a hysteresis model considering performance deterioration due to repeated cyclic deformation
- Shaking table test of full-scale wooden frame



Experiments on tensile bolted glulam column-leg joints subjected to axial force and moment



Full-scale lateral force test of a traditional gable roof frame



Full-scale lateral force test of shear walls by CLT panel construction

Performance evaluation of structural elements consisting of resilient wooden buildings

- Performance evaluation of various structural elements through full-scale experiments and development of design methods
- Development of response control structures and design methods using passive control technology
- Research and development of building structures using cross laminated timber (CLT)