



Quick Inspection Method for the damaged steel structures based on the visible damage

FIRST & MSL, Urban Disaster Prevention Research Core

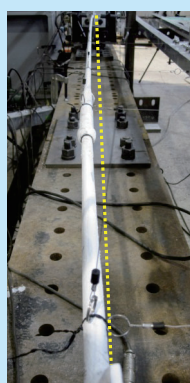
<http://www.udprc.first.iir.titech.ac.jp/~kishikilab/>

- Quick Inspection Method based on the visible damage
- Damage reduction for LGS partition walls in earthquake
- Seismic dampers and retrofit, seismic repair
- Seismic design index based on human behavior

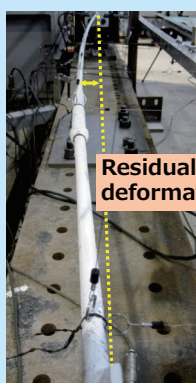
In order to judge the continuous use of gymnasium which is expected to be used for emergency shelter in time of a natural disaster, we research on establishment of **Quick Inspection Method** for steel structures based on the visible damage.

It is an example for damage index of tension-only braces, which enables to judge the experienced deformation during earthquake.

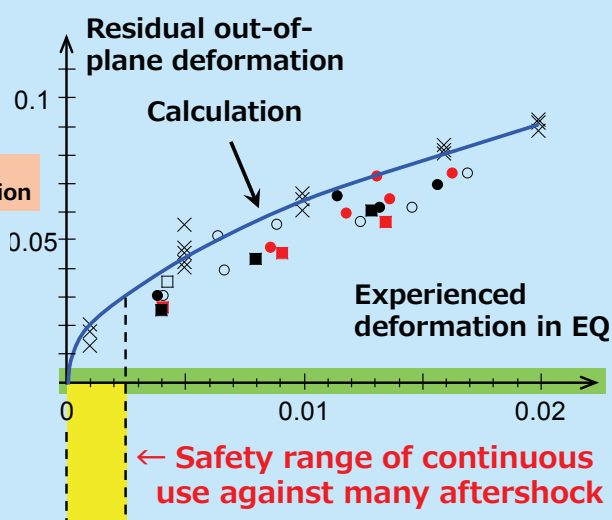
Social implementation of research results:
「Post-earthquake Damage Evaluation」(2016, MLIT)



Safe



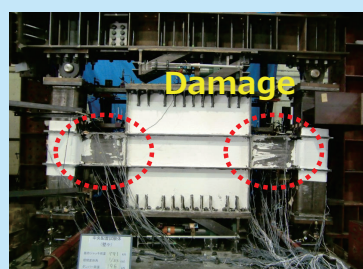
Dangerous
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Connections
for wall damper



Connections
for brace damper



Damage



Damage

Seismic design for damper connections

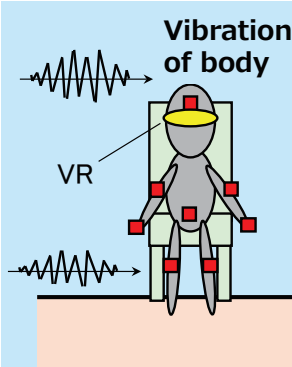
- Deformation restriction caused by wall damper
- Deformation restriction by gusset plate of brace damper
- Analysis model and design considering above effects



Damage reconnaissance of
the 2016 Kumamoto EQ



Damage observation
in structural tests



A new seismic design index based on human behavior

- To understand the human behavior under the earthquake excitation
- To translate the recent design target (acceleration, velocity, displacement) to the human behavior
- To realize the continuous use from a view point of the human behavior