



Nishimura Lab

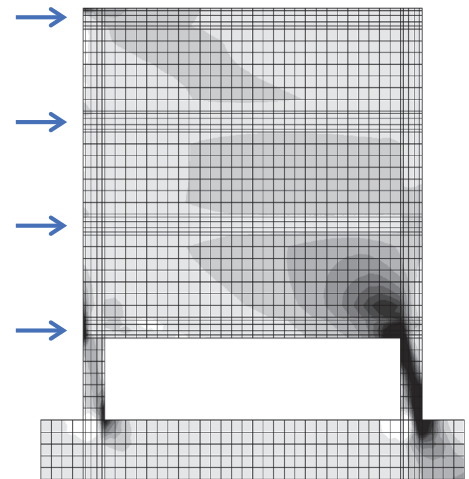
Improvement in Performance and Safety of Concrete Structures

Urban Disaster Prevention Research Core, FIRST
Division of Structural Engineering, MSL

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

- Seismic performance of concrete composite structures
- Stress transfer mechanism in building structures
- Monitoring method for measuring deformation of building structures

Reliable structures can provide people with comfortable urban life. It is required not only safe of occupants in the buildings but also use of the buildings after earthquake disaster in some cases. And a monitoring system of a building structure is also needed to evaluate the structural soundness. Our group conducts experimental and numerical studies of mainly concrete structures aiming for these goals. Accumulating these works, we propose new structural systems, evaluation methods of structural performance, and monitoring method for measuring deformation of structures.



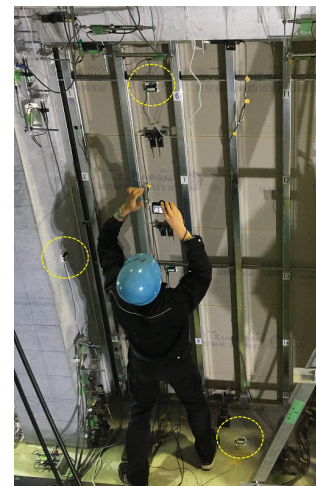
FEM analysis on soft-first-story building

Finite element analysis on damage, stress, and strain behaviors in a reinforced concrete (RC) structure with soft-first-story.



Loading test of RC beam with openings

Static loading test of reinforced concrete (RC) beam with openings for plumbing. Influence of position of the openings and effects of reinforcement are investigated.



Measurement of RC frame structure with MEMS sensor

MEMS sensors are installed on columns and beams of reinforced concrete frame to measure deformation of the frame subjected to static lateral load.